

# “Expanding the Pie” in the Jordan River Basin

---

JACOB PETERSEN-PERLMAN



# Part I – Negotiation Principles and Strategies

---

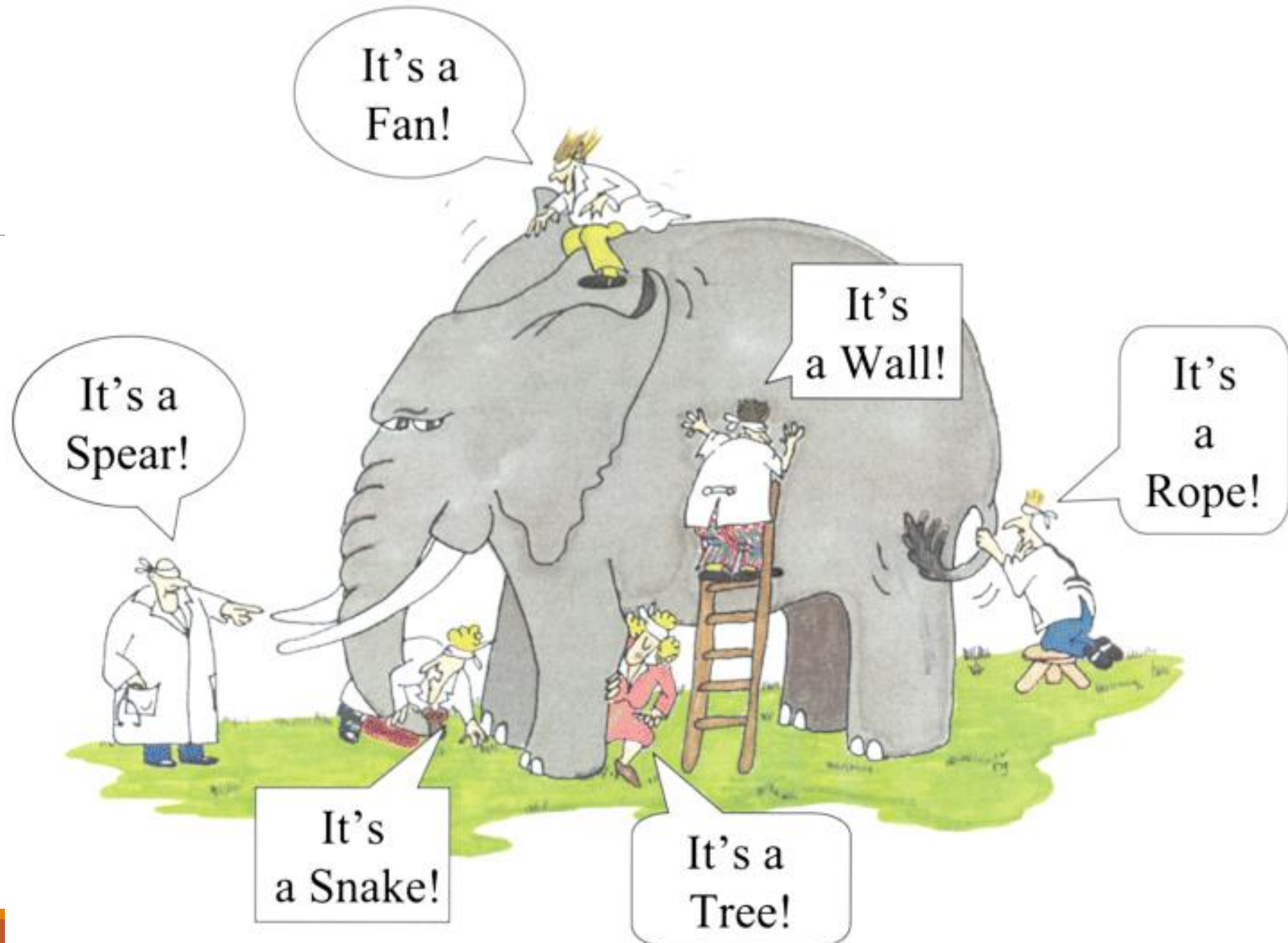
# What color is this dress?

---

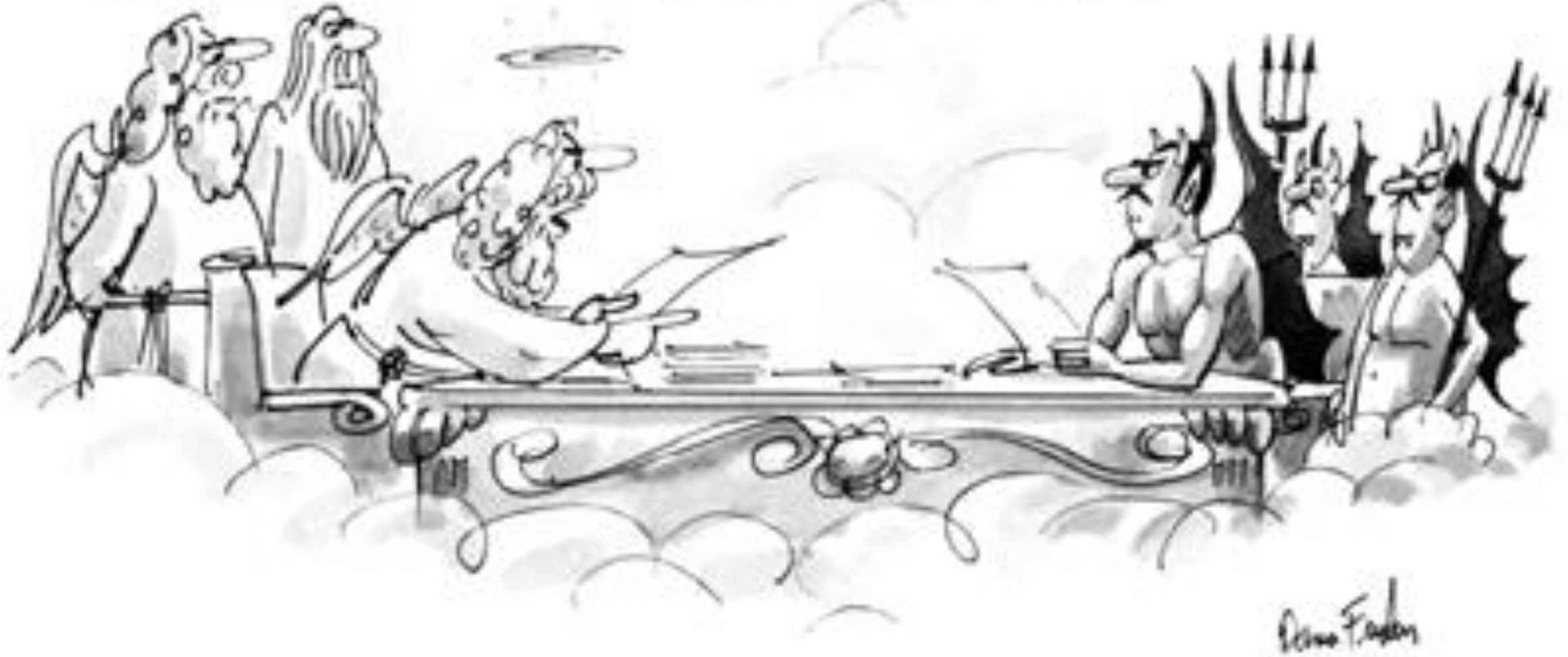


Source: <http://swiked.tumblr.com/post/112073818575/guys-please-help-me-is-this-dress-white-and>

# Multiple perspectives



Which side do you see yourself on?



Cartoon drawing by Dana Fradon, New Yorker Magazine, April 20, 1987, at 39, reprinted in John S. Murray et al., Process of Dispute Resolution 387 (1988).

# The Negotiation Process

---

“Zero-Sum” (positional) vs. “win-win” (integrative)

Alternative approaches to negotiation:

- 1) Underlying interests
- 2) Effective communication between parties

# Ugli Orange Exercise

---

After: what positions were taken during the negotiation?

# General Negotiation Principles

---

Hard vs. Soft negotiators

Principled negotiators:

- Focus on interests, not positions
- “Expand the pie” or “create value”
- Insist that results be based on fair standards independent of either side’s will



# Power in Negotiation

---

Example: Who has more power: parent or child?

What about a parent or screaming child in public?

# Types of bargaining

---

Distributive

Integrative

Accommodative

Mixed

# Comparing Distributive and Integrative Negotiation

Concept/Feature	Distributive/Competitive	Integrative/Collaborative
	“Win-lose”	“Win-win”
Orientation	Competition	Collaboration
Party’s goals	Maximize OWN share of benefits	Increase benefits for BOTH sides
Motivation	Self-interest, individual profit	Mutual interest, mutual gain
Climate of communication	Controlled, selective, purposeful, tactical	Open, constructive

Adapted from: <http://oregonstate.edu/instruct/comm440-540/bargainindex.htm>

# Comparing Distributive and Integrative Negotiation – Strategic and Tactical Factors

Concept/Feature	Distributive/Competitive	Integrative/Collaborative
Process Strategy	Competitive	Collaborative
Outcome Goal	Self-benefit, maximize individual gain	Mutual benefit, maximize joint gain
Issue Focus	Positions	Interests
Featured Tactics	Ambiguity, extreme offers, threats, promises, firm commitment, deadlines	Explore alternatives; role reversal; “yesable” proposals; creative solutions
Deception	Accepted as inherent and justified	Inappropriate and unnecessary

Adapted from: <http://oregonstate.edu/instruct/comm440-540/bargainindex.htm>

# Communication

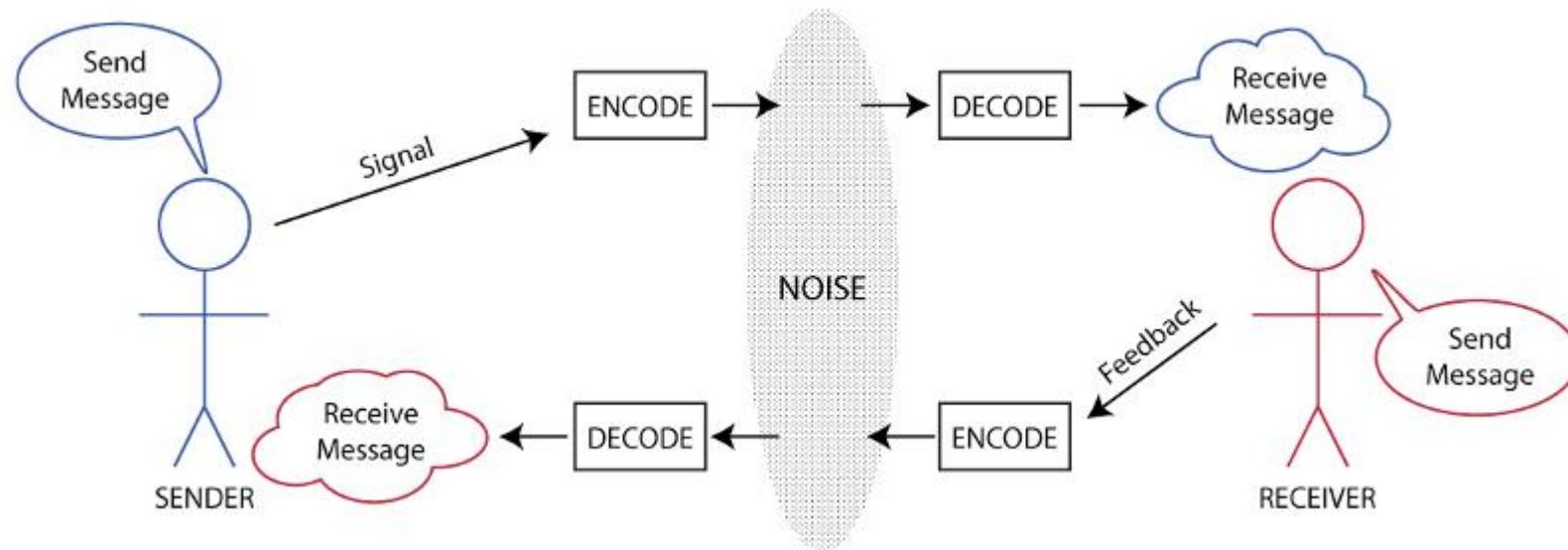
---

What happens with the “telephone” game?

Examples of miscommunication – Between the bombs. Example:  
<http://thisjapaneselife.org/2013/03/06/mokusatsu-hiroshima-japan/>

# How we communicate

Speaker -> Code -> Decode -> Listener



Source:

[http://tutorials.istudy.psu.edu/activelisting/activelisting\\_print.html](http://tutorials.istudy.psu.edu/activelisting/activelisting_print.html)

# Listening exercises

---

## Active listening

From the UgliOrange Exercise (source: [www2.hawaii.edu/~barkai/aals/NEB.doc](http://www2.hawaii.edu/~barkai/aals/NEB.doc); see next slide):

- 1) do not use the classic active listening introductory phrases when active listening,
- 2) use short phrases and not complete sentences in the active listening response,
- 3) active listen the central ideas and feelings,
- 4) paraphrase the speaker if possible,
- 5) you will make mistakes, but active listening self-corrects,
- 6) active listening can be used to avoid prematurely answering questions, and
- 7) active listening is an inoffensive method to interrupt a speaker.

	Instructor	Active Listener (Student)	Instructor Continues	What Happened
1	I just had this great class about communication.	<u>What I hear you saying is</u> you had a great class about communication.	Yeah, that's what I said. Are you feeling OK today?	Classic Parrot  But you're Busted!
2	The instructor was terrific. It was really good. The time went very fast.	<u>It sounds to me like</u> you learned a lot and had fun too.	That's really true. I was surprised by how much I learned.	The classic Paraphrase. Maybe busted by friends (but strangers and emotional friends won't notice)
3	It all sounds so <u>simple</u> , but there are some <u>complicated</u> parts.	... simple but complicated?	Yeah, the ideas are easy, but there is really a lot too it.	Parrot the phrase
4	You know I never thought about the fact that in a conflict situation, what the other guy is saying, is often not what he meant to say.	... the words people use is not what they are thinking ... ?	Right, and it seem so obvious after that class. In some ways that explains what happened between Peter and me.	Re-phrase
5	Things were really heating up between us. It was getting weird, but neither of us recognized that.	... the conflict was building but you didn't notice it happening?	Oh, we noticed it all right. We both did. But it just shouldn't have happened between good friends like us.	A.L. self corrects
6	What do you think you would you have done in a situation like that?	... you are concerned about what to do in spots like that?	I really am. It shouldn't have happened, and I don't want it to happen again. He and I need to sit down and talk about it when we are both feeling calmer.	A.L. a question
7	[if they go on and on and on and on and on]	<u>Wait a minute! Let me see if I understand you</u>		They'll love you for interrupting them.



# Active vs. passive listening exercise

---

# Listening critique

---

Video title: Two mothers: Israeli and Palestinian, Part 1: <https://www.youtube.com/watch?v=A-j2SPNhRcM>

Pay attention to the evolution of the dialogue.

What were the sources of their miscommunications?

# Maslow's hierarchy of needs

---



# Defining consensus

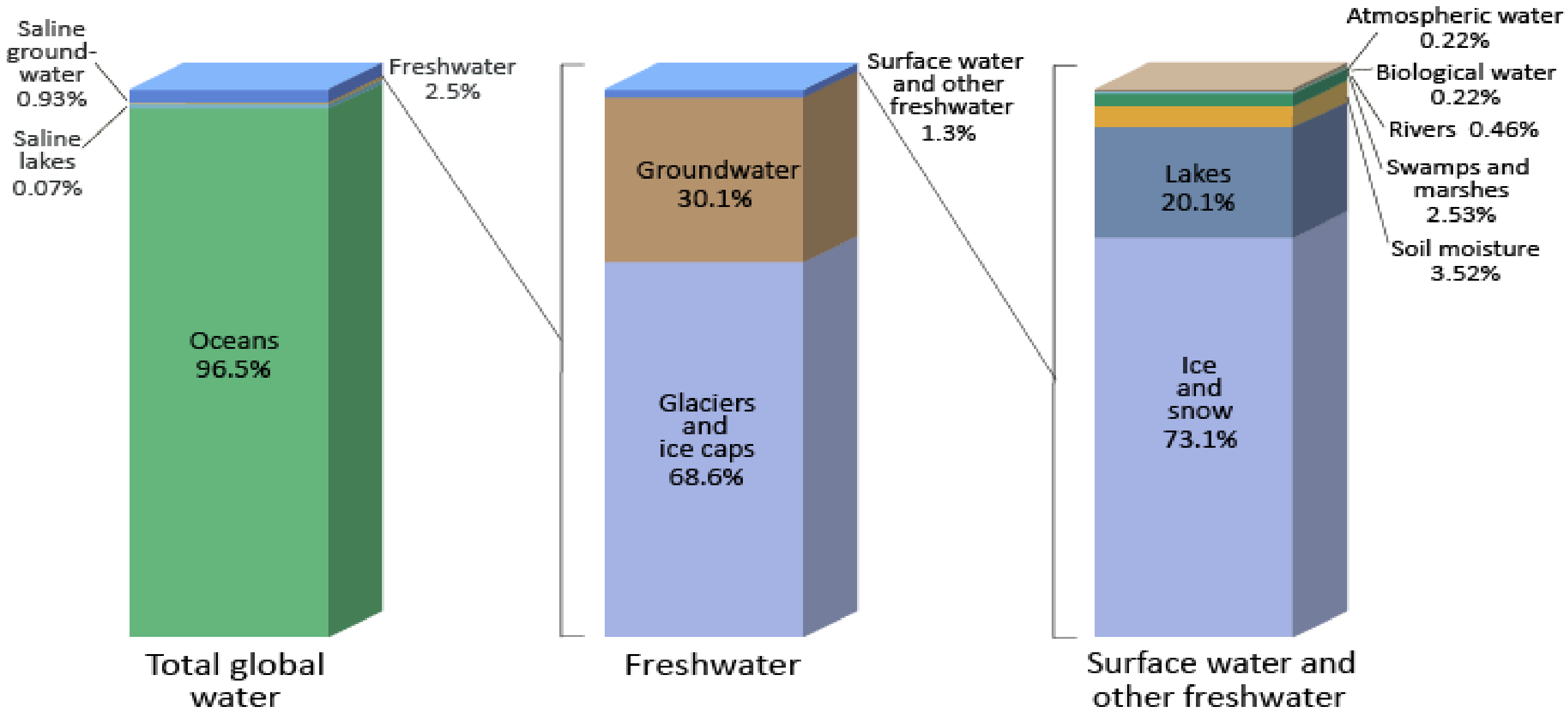
---

Not the same as unanimous consent

# Part II – Hydrologic Background

---

# Distribution of Earth's Water



Source: Igor Shiklomanov's chapter "World fresh water resources" in Peter H. Gleick (editor), 1993, *Water in Crisis: A Guide to the World's Fresh Water Resources*.

# Importance of Water

---

Cooking

Washing

Use large amounts for:

- Agriculture
- Manufacturing
- Mining
- Energy production
- Waste disposal

Use of freshwater is increasing



# Freshwater Terminology

---

## Surface water

- Precipitation that remains on the surface and does not seep into soil

## Runoff

- Movement of surface water to lakes, rivers, etc.

## Watershed (drainage basin)

- Land area that delivers water into a stream or river system

## Groundwater

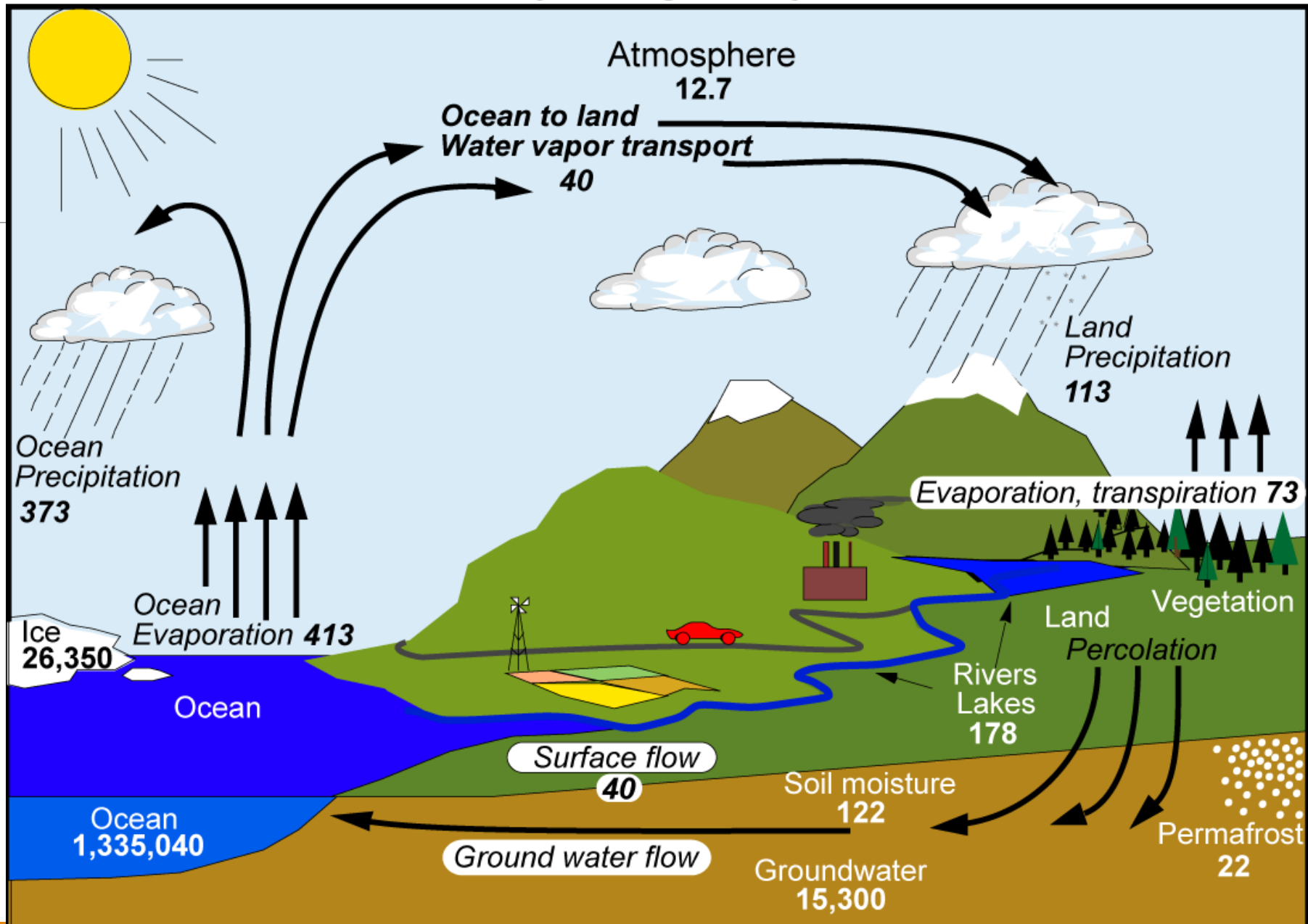
- Freshwater under the earth's surface stored in aquifers

## Aquifer

- Underground caverns and porous layers of sand, gravel and rock in which groundwater is stored



# Hydrological Cycle

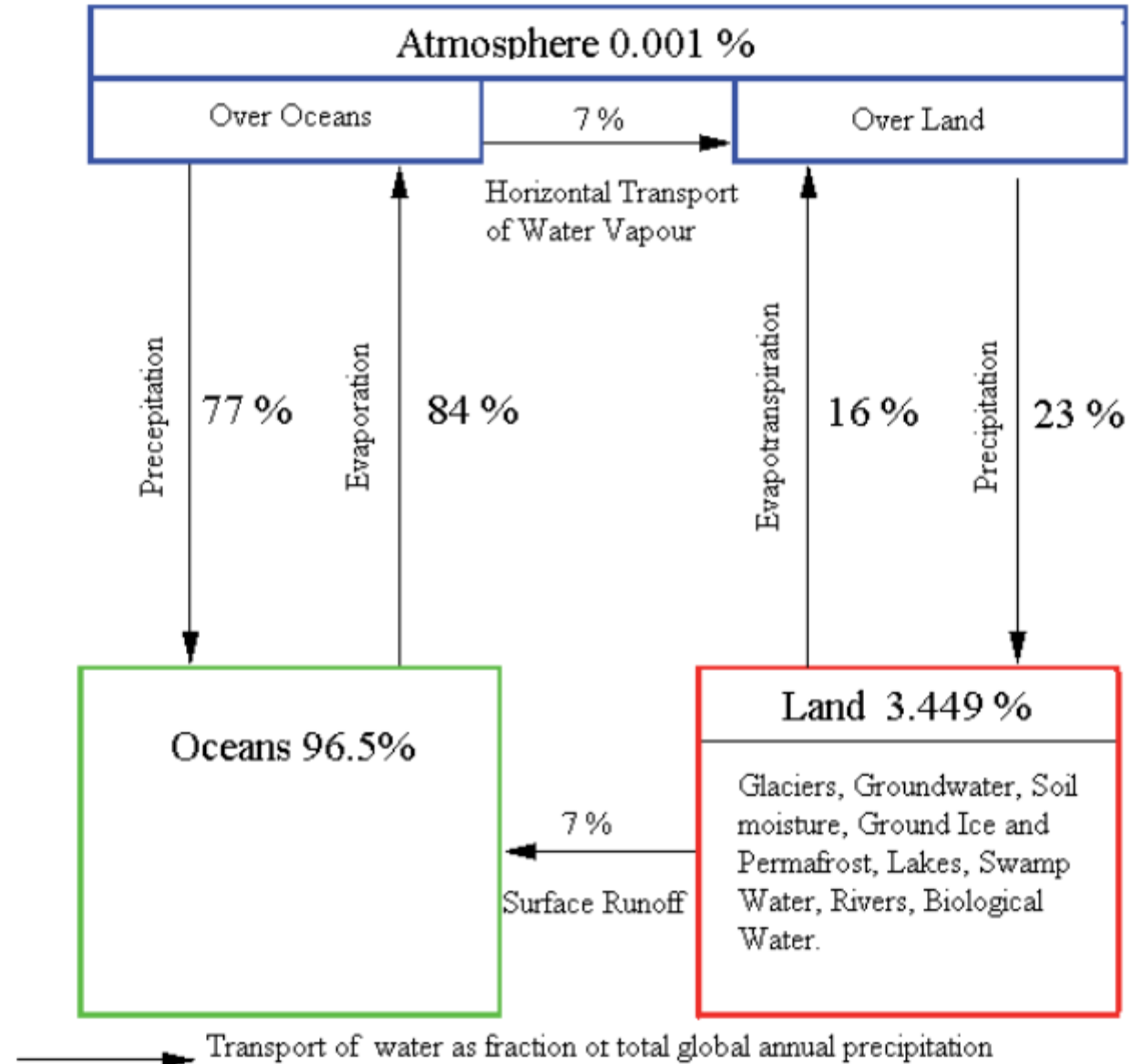


Units: Thousand cubic km for storage, and *thousand cubic km/yr* for exchanges

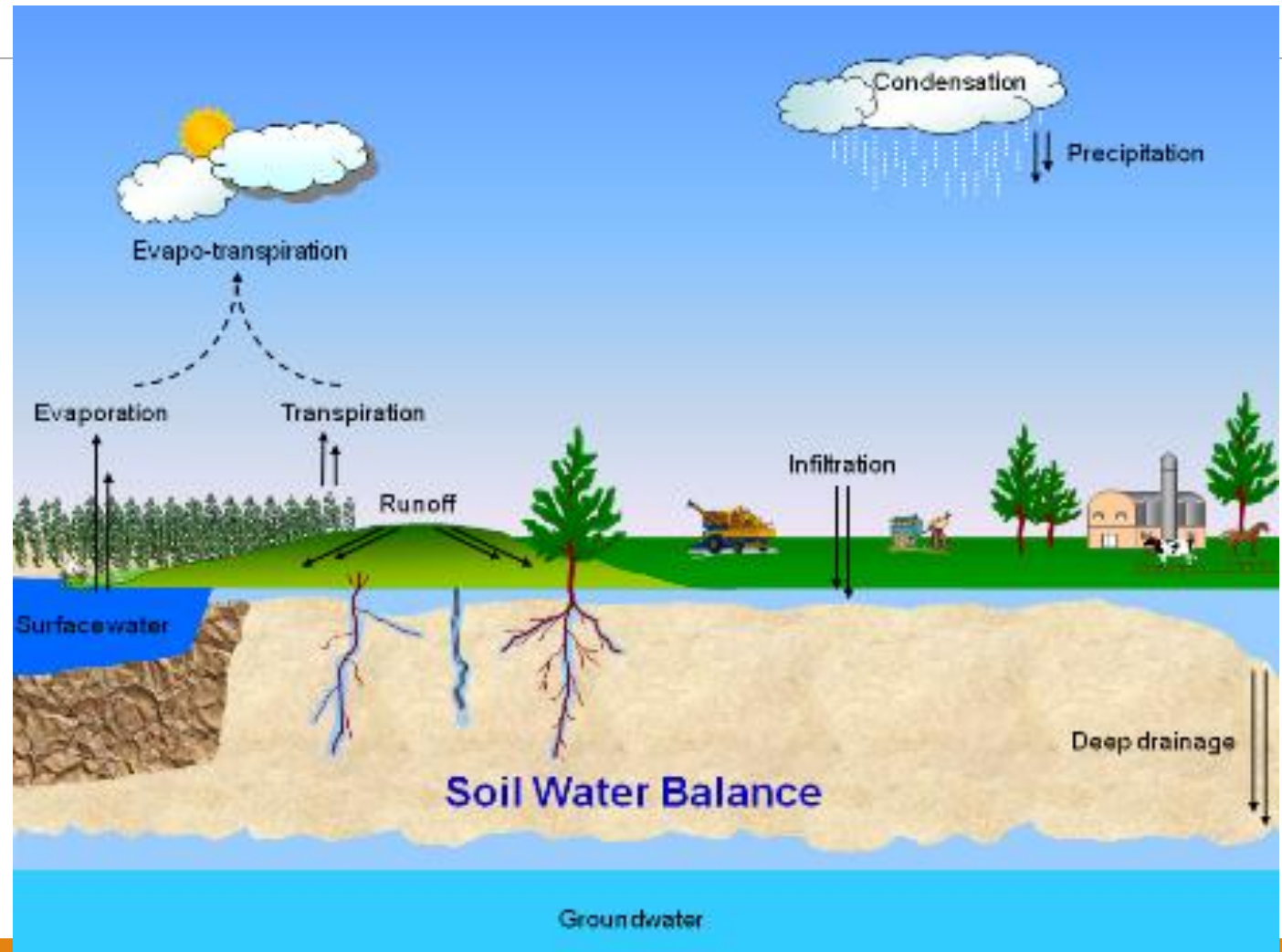
Source: <http://www.cgd.ucar.edu/cas/Topics/hydro.colB.png>

Source: [http://www.fao.org/nr/water/faonile/products/docs/manuals/training\\_manual.pdf](http://www.fao.org/nr/water/faonile/products/docs/manuals/training_manual.pdf)

FIGURE 3: PRINCIPAL EXCHANGES AND RESERVOIRS IN THE HYDROLOGICAL CYCLE.



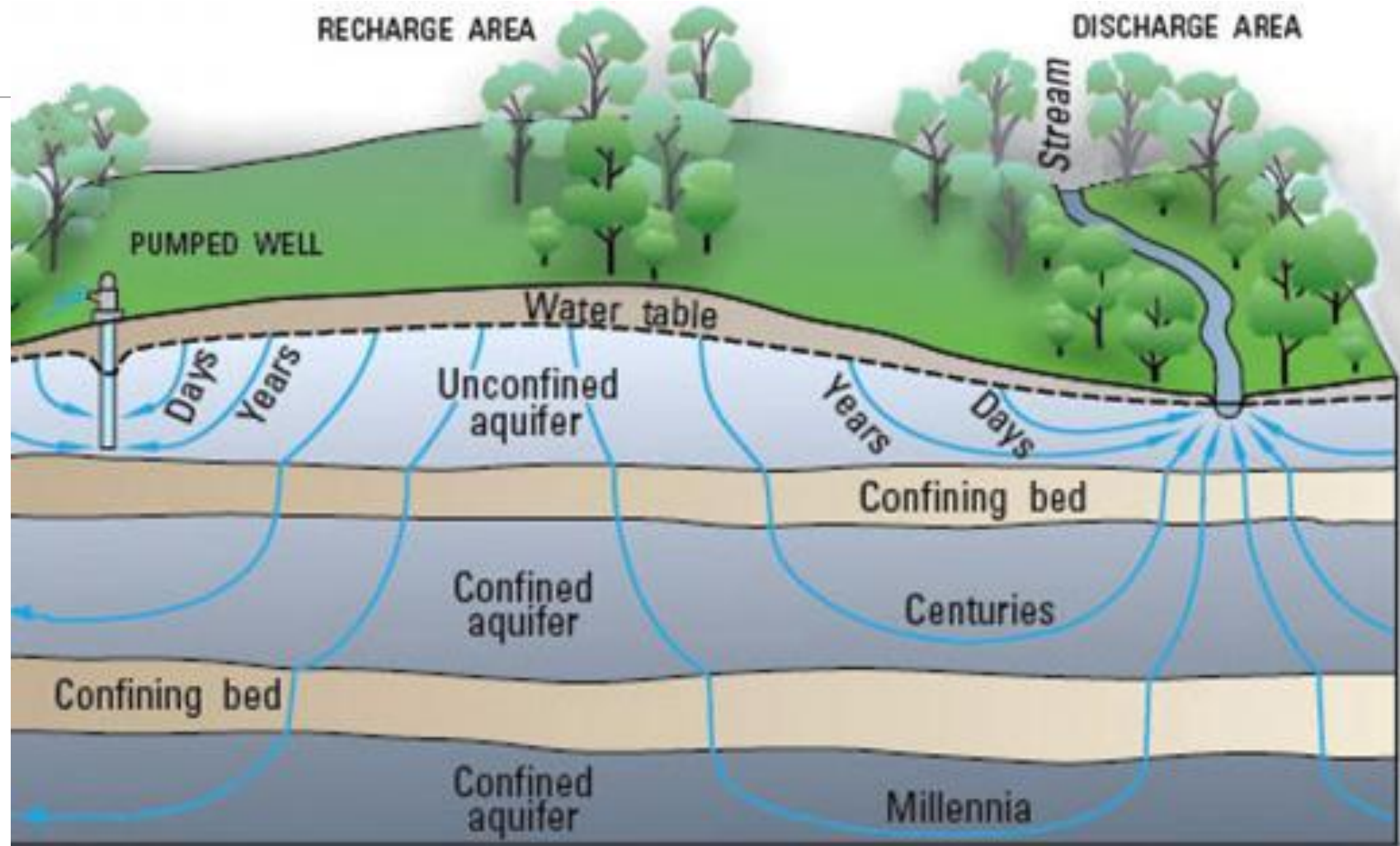
# Soil-Water Budget



Source:  
<https://atrium.lib.uoguelph.ca/xmlui/bitstream/id/8806/?sequence=-1>

# Groundwater

Source:  
[http://www.pinelandsalliance.org/images/artmax/artmax\\_388.jpg](http://www.pinelandsalliance.org/images/artmax/artmax_388.jpg)



# Water Use and Resource Problems

---

Fall into Three Basic Categories

- Too much water
- Too little water
- Poor quality/contamination

# Too Little Water

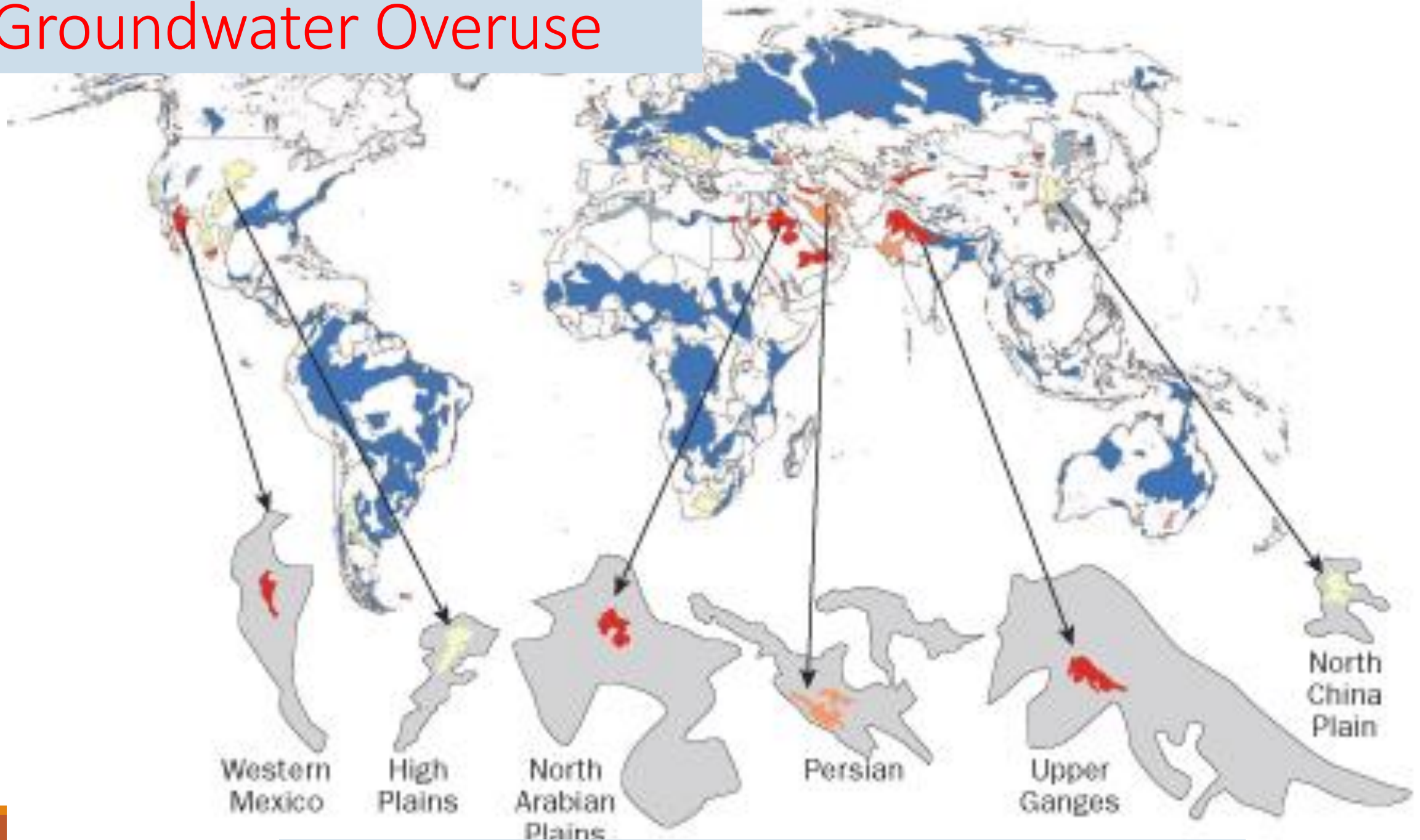
Typically found in arid land

## Problems

- Aquifer depletion
  - Subsidence
  - Sinkholes
- Drought
- Overdrawing water for irrigation purposes

◦ Source: <http://stateofthenation2012.com/?p=13541>

# Groundwater Overuse



Source: <https://www.sciencenews.org/sites/default/files/16277>

# Consequences of groundwater overuse...



Source: [http://static.guim.co.uk/sys-images/Guardian/Pix/audio/video/2013/8/14/1376407803741/Florida\\_sinkhole\\_010.jpg](http://static.guim.co.uk/sys-images/Guardian/Pix/audio/video/2013/8/14/1376407803741/Florida_sinkhole_010.jpg)



# WATERED DOWN

Source: [http://i.dailymail.co.uk/i/pix/2013/03/05/article-2288607-18760D24000005DC-571\\_634x422.jpg](http://i.dailymail.co.uk/i/pix/2013/03/05/article-2288607-18760D24000005DC-571_634x422.jpg)

A look at the depth of the water table in different areas of Delhi

## That sinking feeling

PLACE	10 YEARS AGO	NOW	DROP
Vasant Kunj	66 ft	Below 132 ft	Nearly 100%
Mukherjee Nagar	16.5 ft	21.45 ft	30%
Chhattarpur	49.5 ft	148.5 ft	200%
Model Town	13.2 ft	23.1 ft	75%
CR Park	66 ft	115.5 ft	75%

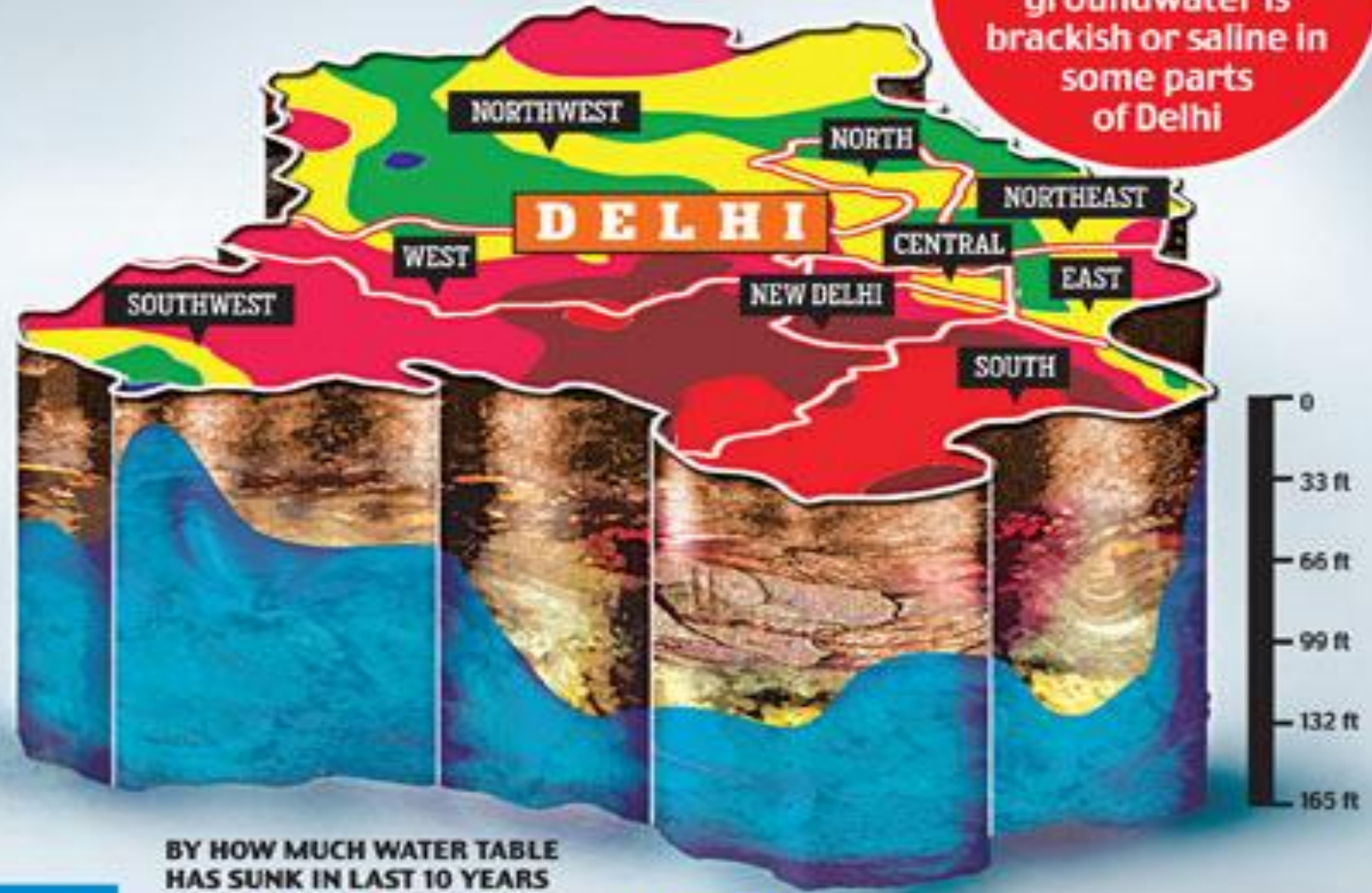


- **WEST DELHI:** High nitrate concentration found in groundwater
- **NORTHWEST DELHI:** High fluoride content found in groundwater
- **WEST, EAST, PARTS OF NORTHWEST & NORTHEAST:** Heavy metals found in groundwater

**Deteriorating water quality**

- 99-231 ft depth at which fresh groundwater is found at present
- Below 231 ft water is brackish or saline in the city

**66-82 ft**  
depth at which groundwater is brackish or saline in some parts of Delhi



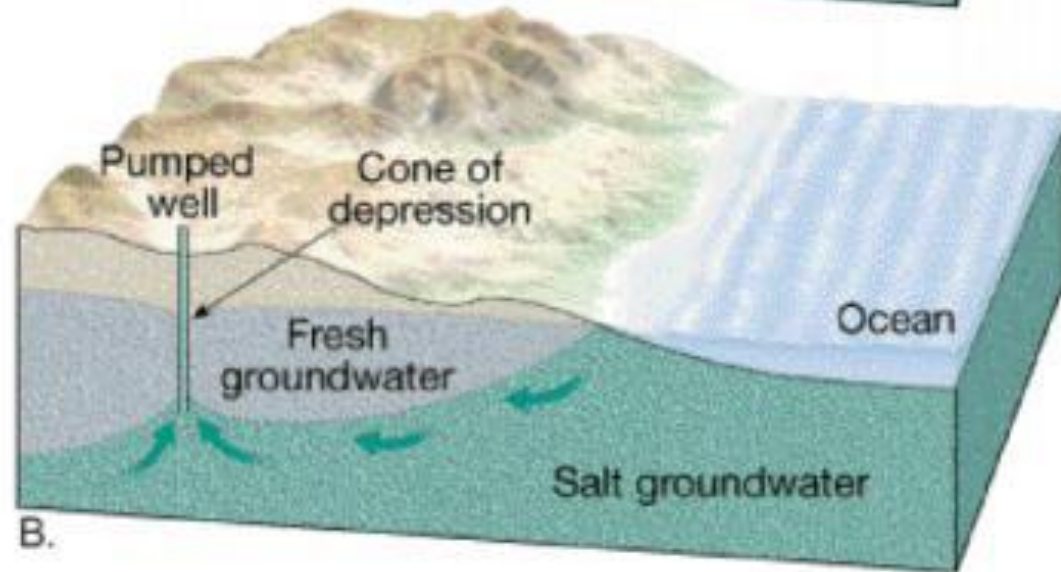
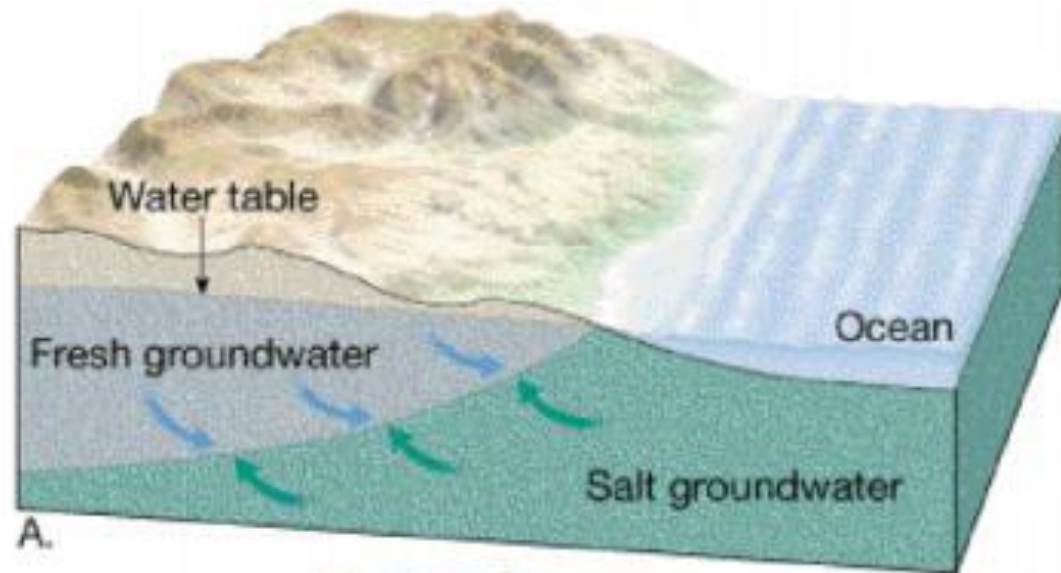
**BY HOW MUCH WATER TABLE HAS SUNK IN LAST 10 YEARS**

- 6.6 ft
- 6.6-16.5 ft
- 16.5-33 ft
- 33-66 ft
- 66-132 ft
- 132 ft

# Too Little Water

Problems (continued)

- Saltwater Intrusion



Source: <http://www.hgiworld.com/services/ground-water/salt-water-intrusion/>

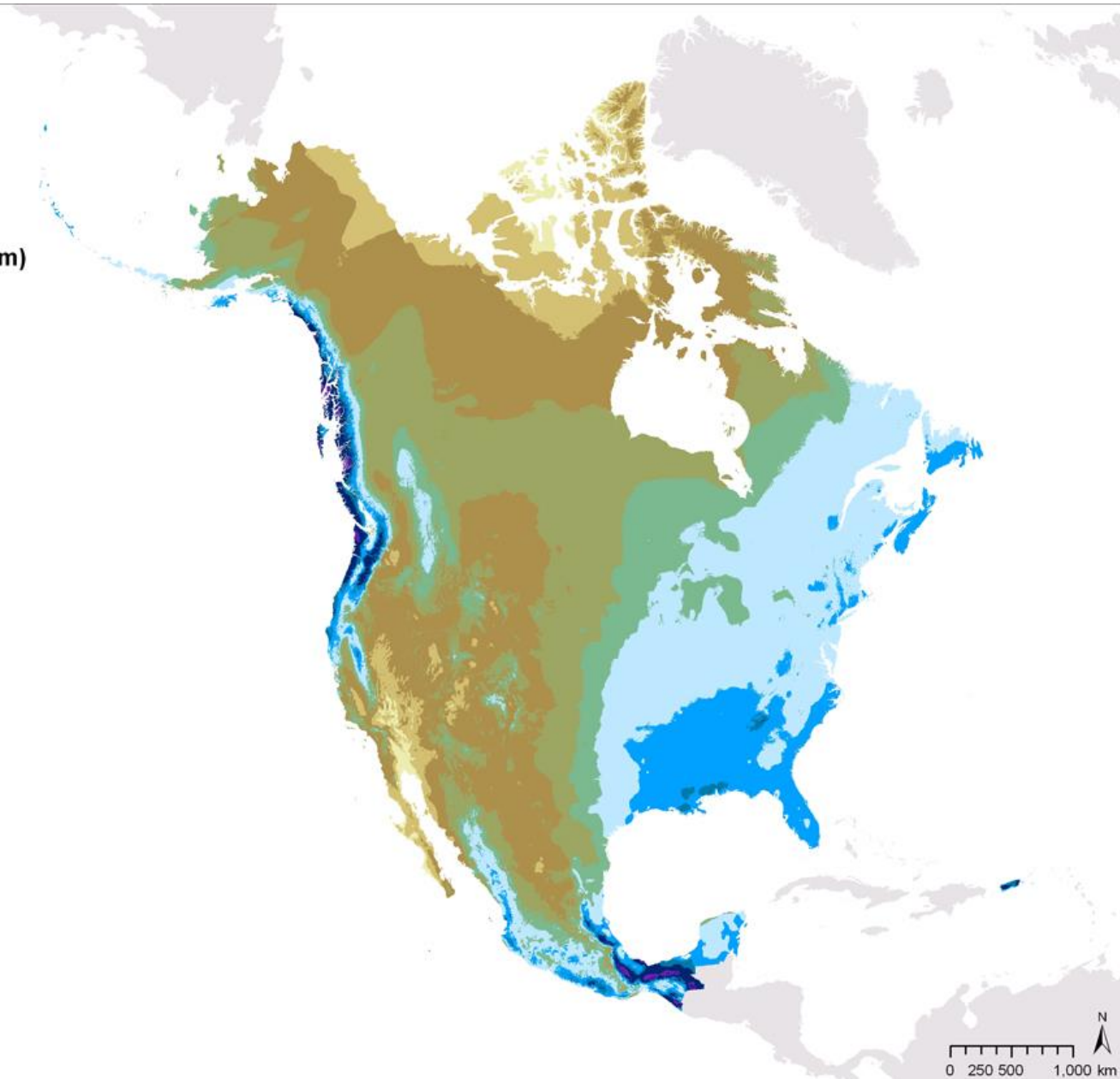
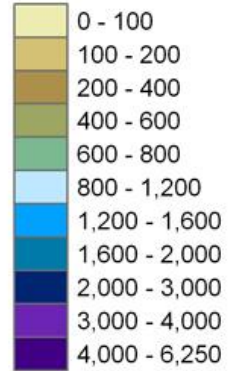
# Water Problems In US and Canada

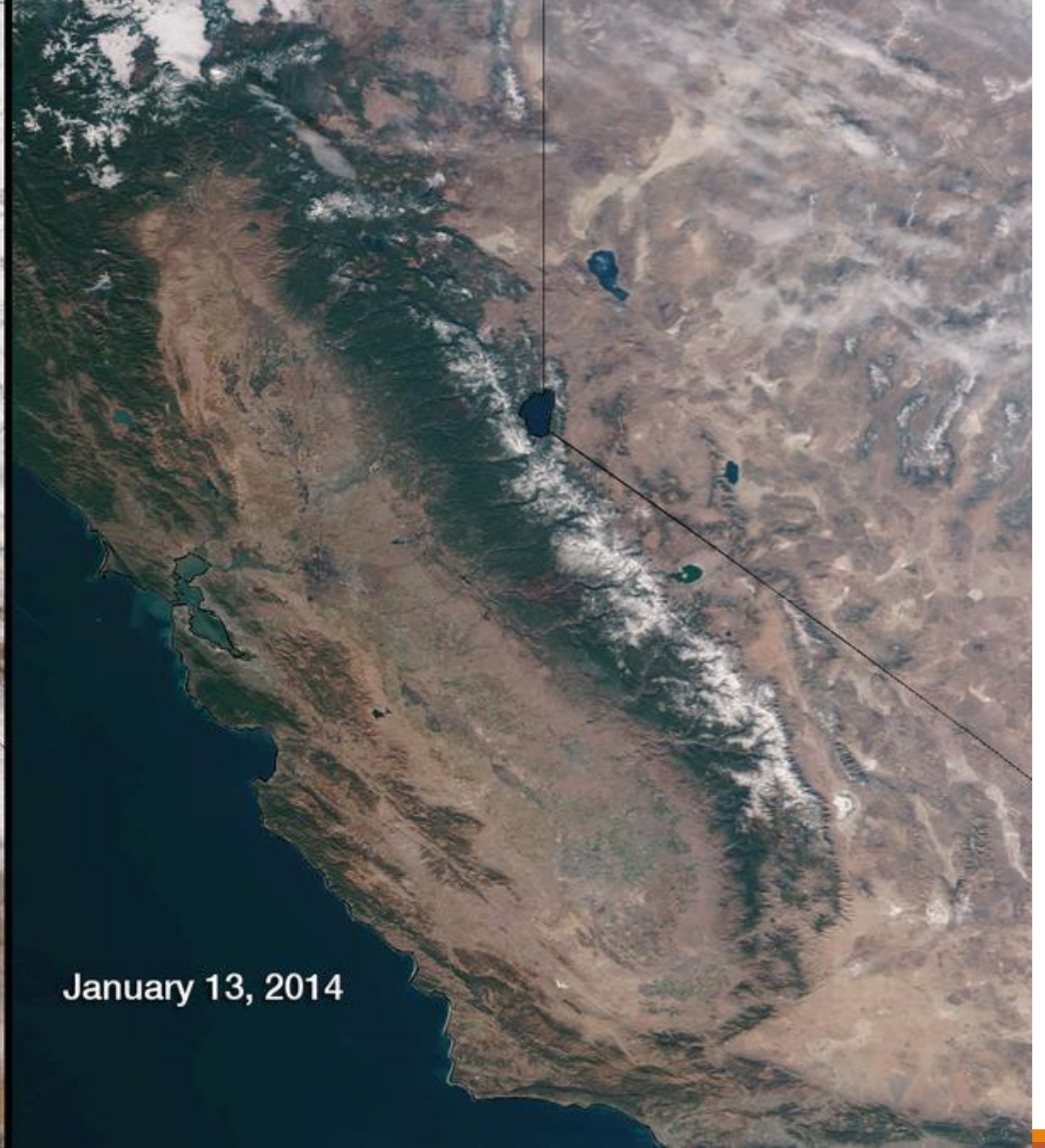
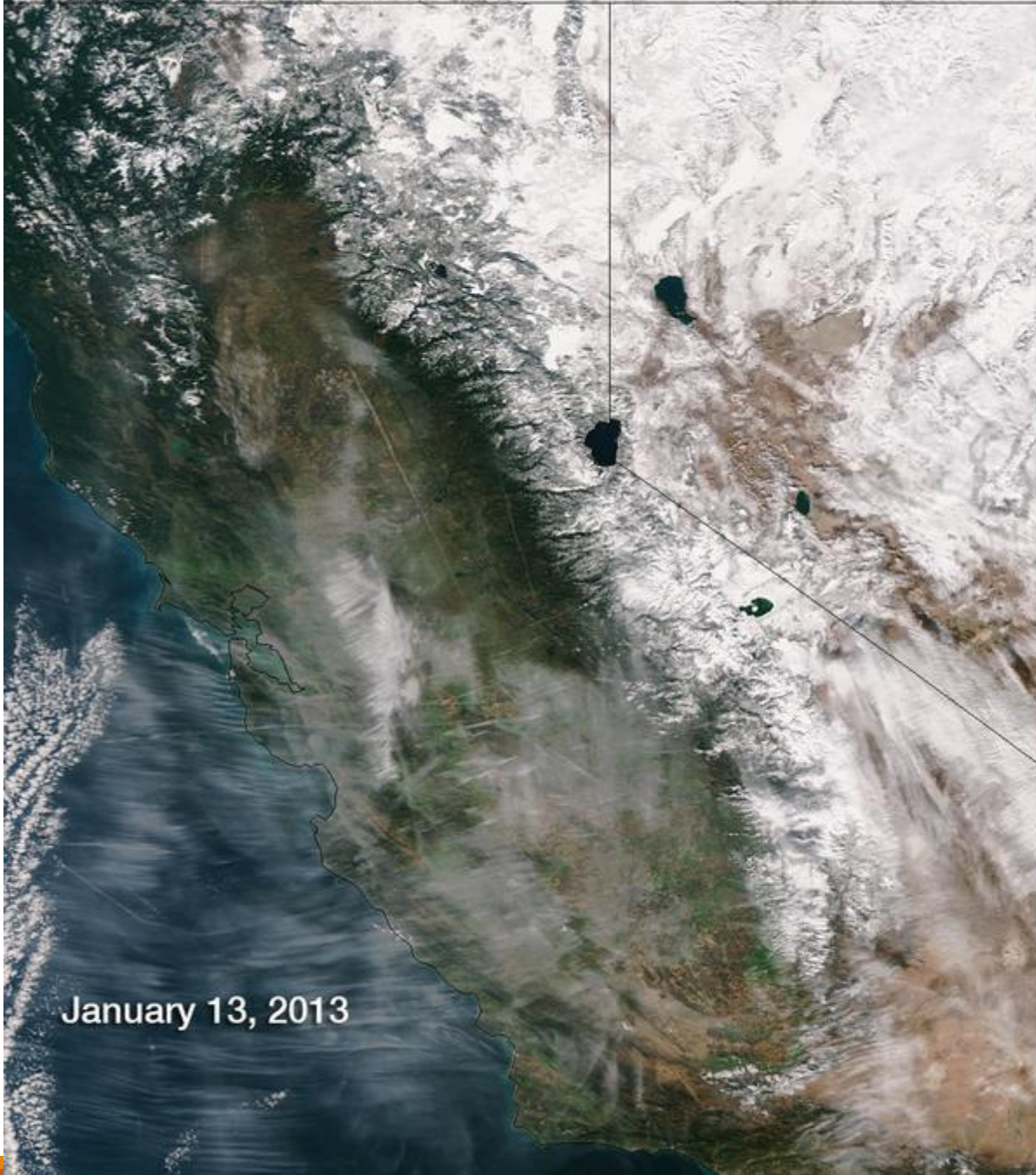
US has a plentiful supply of freshwater

Many areas have a severe shortages

- Geographical variations
- Seasonal variations

Precipitation (mm)





Source: <http://www.nnvl.noaa.gov/MediaDetail2.php?MediaID=1483&MediaTypeID=1>

# Water Problems in US and Canada



Water shortages in West and Southwest

- Water is diverted and transported via aqueducts

◦ Source: <http://www.planetforward.org/idea/cover-the-california-aqueduct-in-solar-panels-to-double-down-on-energy>

# Depletion of Endoheric Lakes

---

Aral Sea animation:

- <http://www.britannica.com/EBchecked/media/143333/An-animation-demonstrating-the-shrinking-of-the-Aral-Sea-from>

Owens Lake

# Colorado River bed in Mexico – 70 miles upstream of the Gulf of California



Source: <http://projects.voanews.com/waters-edge/>

# Defining drought

---

Meteorological drought

Agricultural drought

Hydrological drought

Socioeconomic drought



# Lake Mead. Source: <http://www.good.is/posts/lake-mead-is-drying-up>



# Too Much Water

---

## Flooding

- Both natural and human-induced

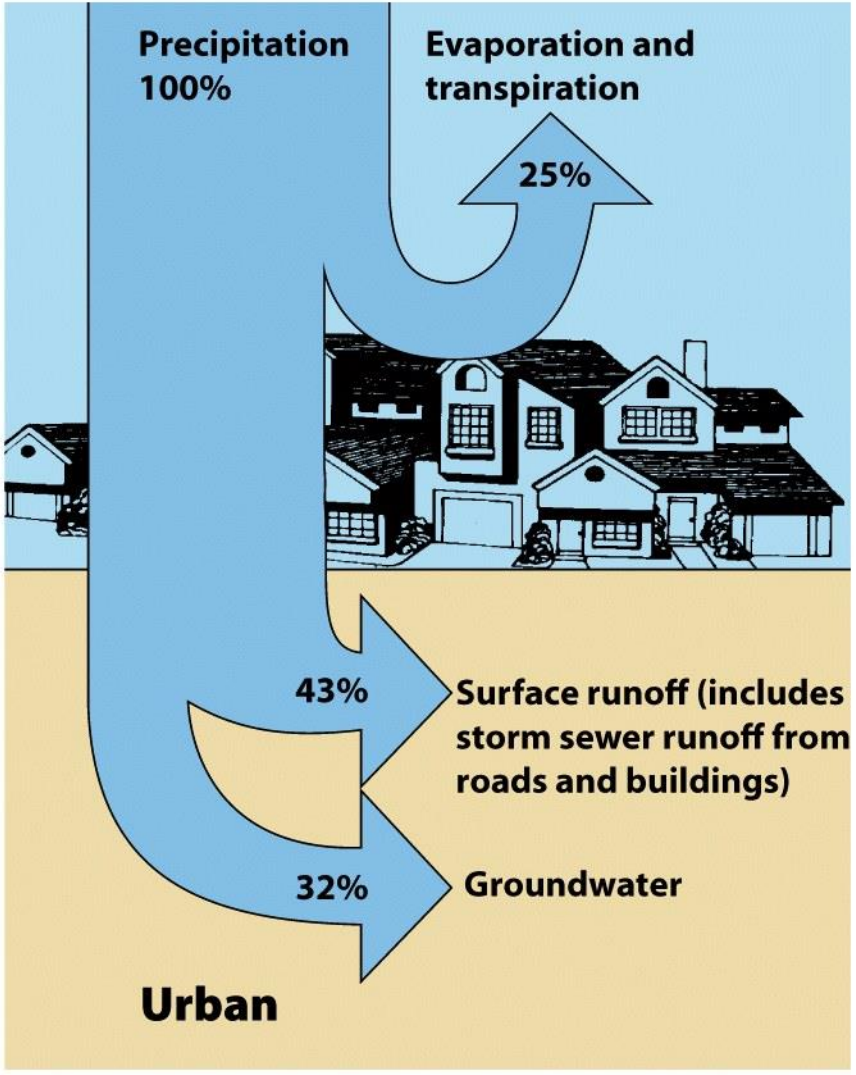
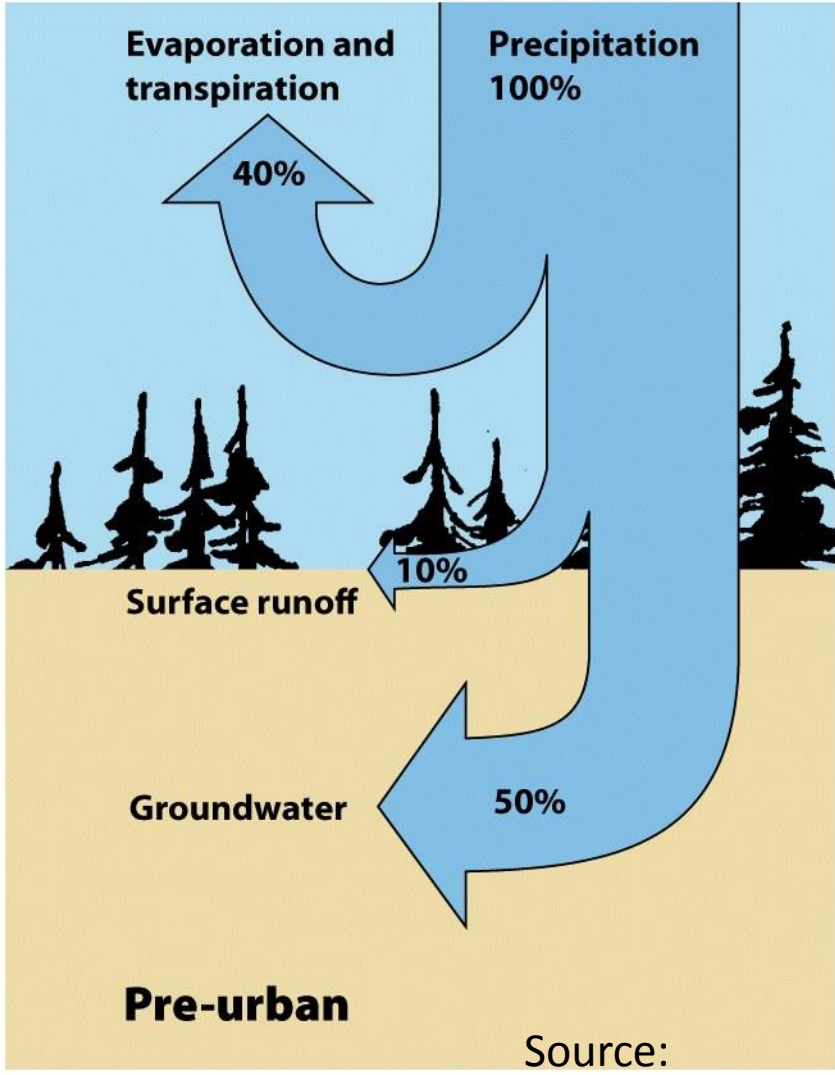
Modern floods are highly destructive because humans:

- Remove water-absorbing plant cover from soil
- Construct buildings on floodplains

## Floodplain

- Area bordering a river channel that has the potential to flood

# Urban vs. Pre-Urban Floodplains



Source:  
<http://slideplayer.com/slide/6361699/>

# Floodplain

---

Government restrictions on building

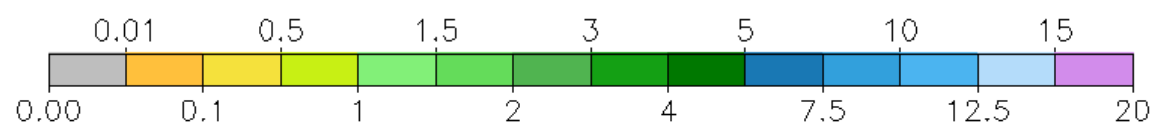
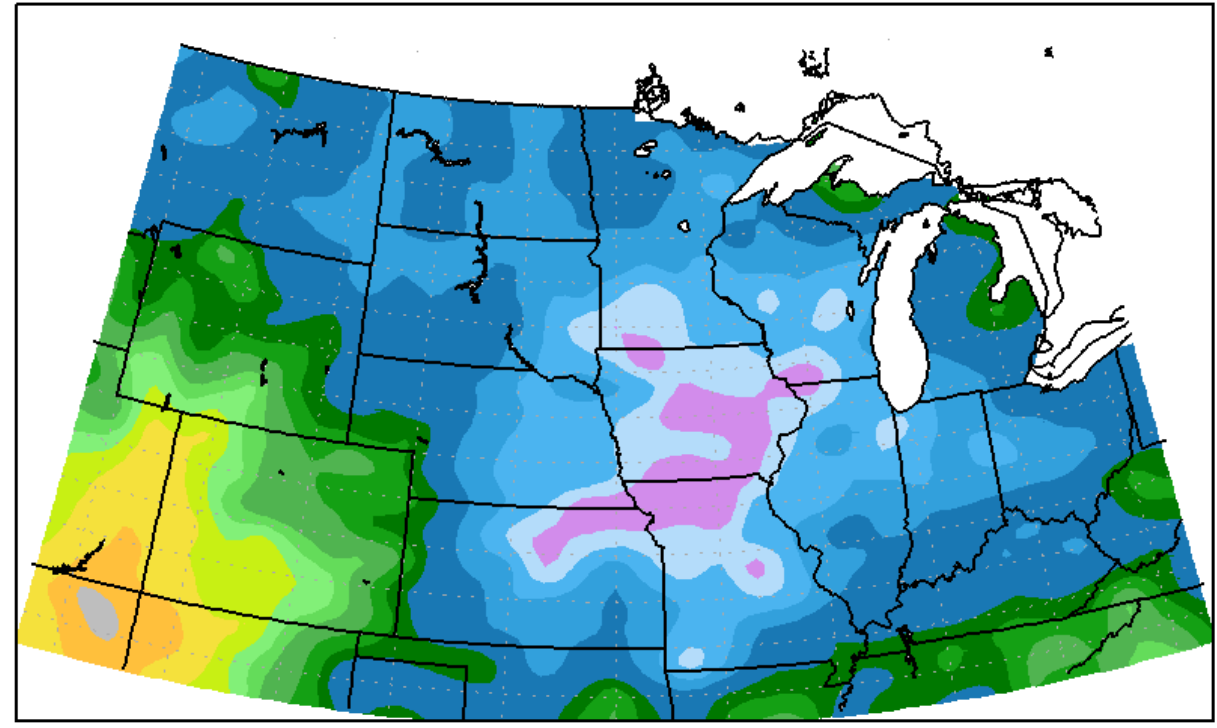
- Levees can fail
- Rather than rebuild levees adjacent to rivers, experts suggest allowing some flooding of floodplains during floods



Source: <http://www.bbc.com/news/world-europe-22779749>

# Case-In-Point: Floods of 1993

Accumulated Precipitation (in)  
June 1, 1993 to July 13, 1993



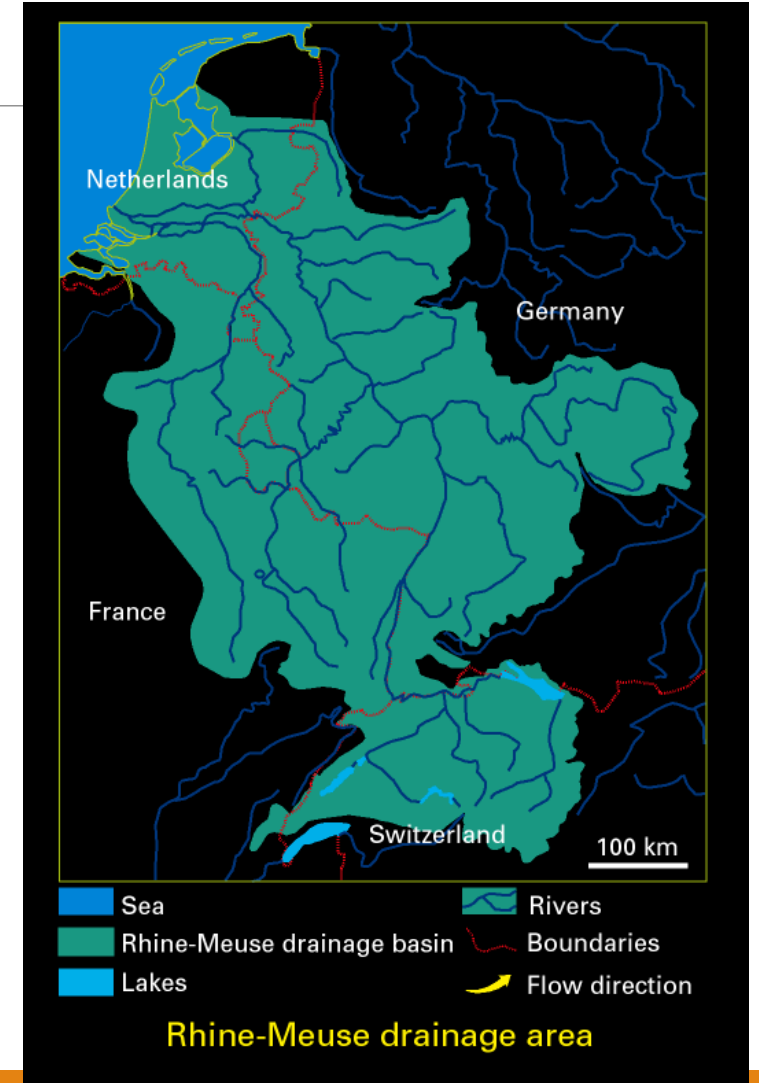
Midwestern Regional Climate Center  
cli-MATE: MRCC Application Tools Environment  
Generated at: 7/13/2015 9:44:57 AM CDT

# Poor quality/contamination

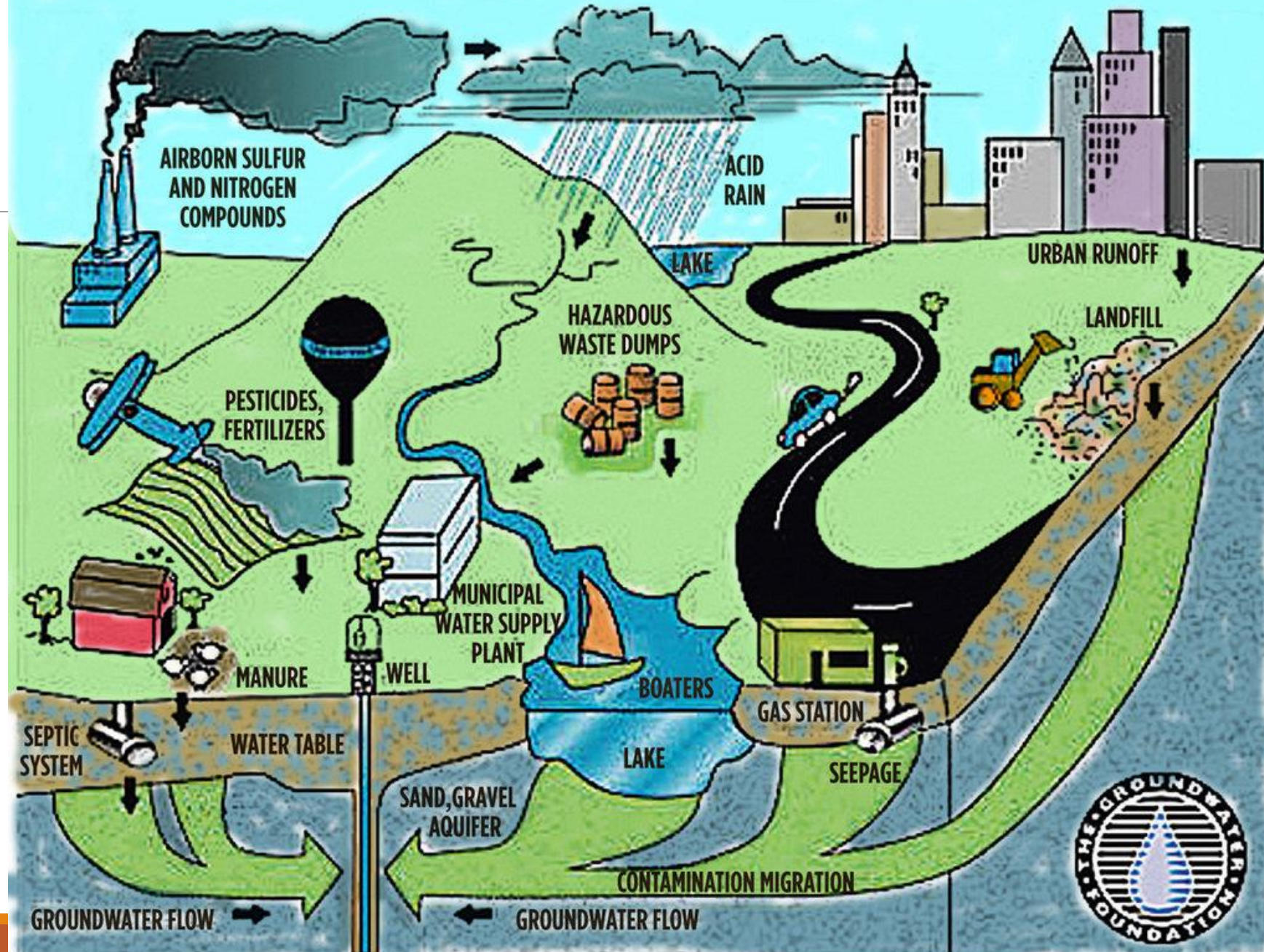
## Sharing Water Resources Among Countries

- Rhine River Basin (right)
  - Countries upstream discharged pollutants into river
  - Countries downstream had to pay to clean the water before they could drink it

Source: <http://www.geo.uu.nl/fg/palaeogeography/rhine-meuse-delta>



# Sources of groundwater contamination



Source: The Groundwater Foundation, Illustration by C. Mansfield

GAZETTE

# Consumptive vs. non-consumptive use

---

Brainstorm with your neighbors – what are two consumptive and two non-consumptive uses?



---

**Consumptive**

Irrigation

Municipal

Some Industrial

**Non-consumptive**

Hydropower

Recreation

Some Industrial

Mining

Navigation

Fishing



# Global Water Problems

---

Amount of freshwater on planet CAN meet human needs

- BUT, it is unevenly distributed and some places lack stable runoff

Problems:

- Climate Change
- Safe and Reliable Access to Drinking Water
- Population Growth
- Sharing Water Resources Among Countries

# Global Water Problems

---

## Water and Climate Change

- Climate change affects the type and distribution of precipitation
- Potential issues:
  - Reduced snowfall will impact water resources downstream
  - Sea level rise will cause saltwater intrusion into drinking water supplies

# Global Water Problems

---

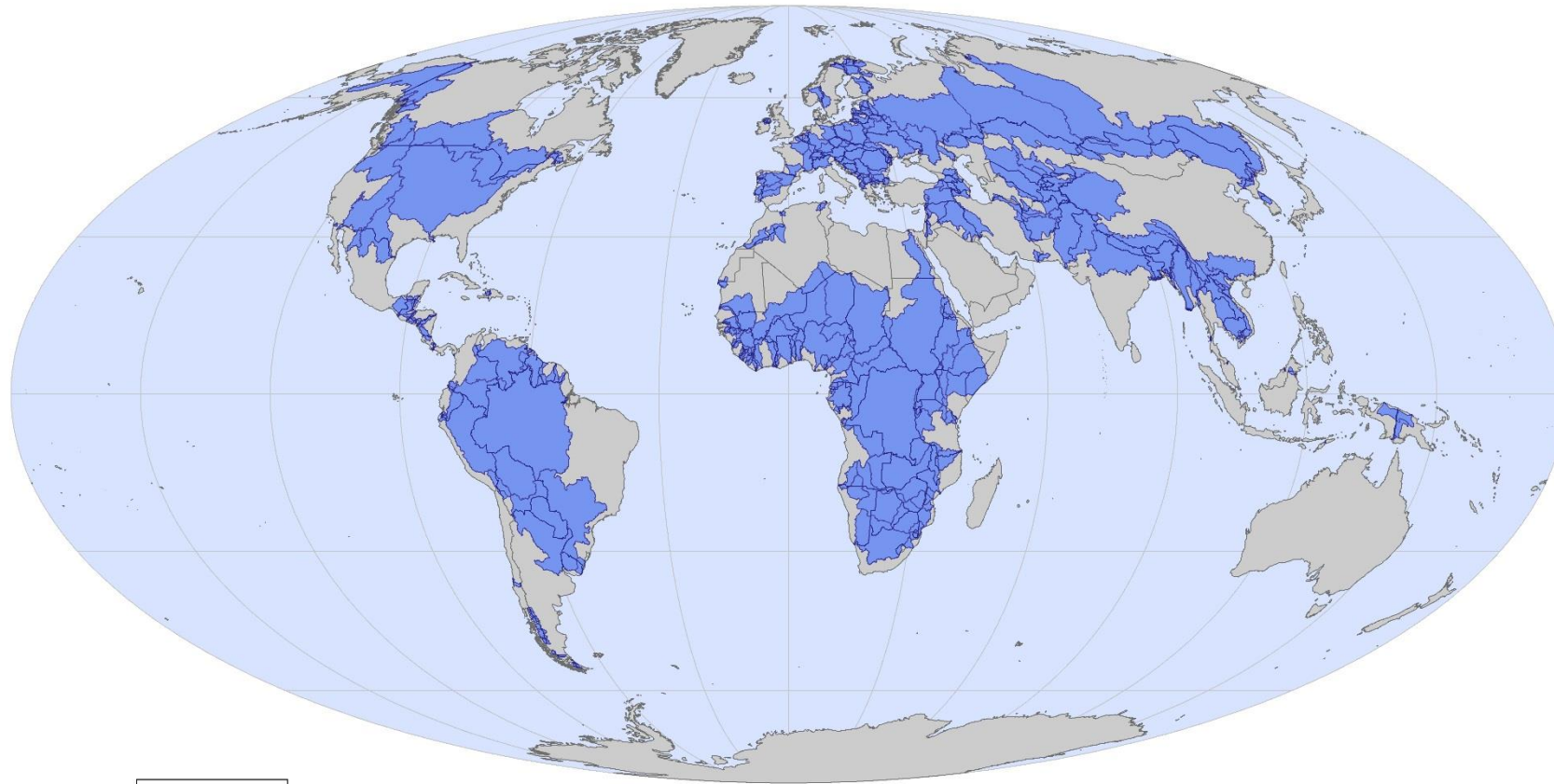
## Drinking Water Problems

- Many developing countries have insufficient water to meet drinking and household needs

## Population Growth

- Increase in population means an increase in freshwater requirements
- Limits drinking water available
- Limits water available for agriculture (food)

# International River Basins



Transboundary Freshwater Dispute Database  
Oregon State University, 2010

# Global Water Problems

## Potentially Volatile International Water Situations

- Jordan River
- Nile River

Source:

[https://www.cartoonstock.com/directory/w/water\\_supply.asp](https://www.cartoonstock.com/directory/w/water_supply.asp)



**IN THE FUTURE, WARS WILL  
BE FOUGHT OVER WATER**

# Water Management

---

Main Goal: Provide sustainable supply of high-quality water

- Requires humans to use resource carefully

Dams and Reservoirs

Water Diversion Projects

Desalination

# Dams and Reservoirs

## Benefits:

- Ensure year-round supply of water with regulated flow
- Generate electricity
- Provide recreational activities

## Disadvantages

- Alter the ecosystem
- Reduce sediment load

Image Source: [http://india-wris.nrsc.gov.in/wrpinfo/images/1/1a/Mula\\_Dam.jpg](http://india-wris.nrsc.gov.in/wrpinfo/images/1/1a/Mula_Dam.jpg)



**MULA DAM, Tal. RAHURI, Dist. AHMEDNAGAR. ( MAHARASHTRA )**



# Dam removal of the Elwha

---

Timelapse: <https://www.youtube.com/watch?v=mQusj6tD97w>

Documentary: <http://www.outsideonline.com/outdoor-adventure/the-current/the-stream/Return-of-the-River-Elwha-Dam-Documentary.html>

# Desalination

---

Removal of salt from ocean or brackish water

Two methods:

- Distillation- salt water is evaporated, and water vapor is condensed into freshwater (salt left behind)
- Reverse Osmosis- involves forcing salt water through a membrane permeable to water, but not salt

Very expensive

# Desalination process (15 minutes)

---

[Water from water – Desalination. https://www.youtube.com/watch?v=2XMRIFMJB-g](https://www.youtube.com/watch?v=2XMRIFMJB-g)

# Water Rights of the Jordan Basin

---

## **Main Agreements**

### **JORDAN - SYRIA**

1953 and 1987 – On the use of the Yarmouk River, including the construction of the Wahdah Dam and 25 dams in Syria. The agreement also establishes a joint commission for the implementation of the provisions on the Wahdah Dam.

### **ISRAEL - JORDAN**

1994 – Annex II of the Treaty of Peace concerns water allocation and storage of the Jordan and Yarmouk Rivers, and calls for efforts to prevent water pollution as well as the establishment of a Joint Water Committee.

### **ISRAEL - PALESTINE (PLO)**

1995 – Article 40 of the Oslo II political agreement states that Israel recognizes Palestinian water rights in the West Bank only and establishes the Joint Water Committee to manage West Bank waters and develop new supplies.  
Palestinians are denied access to the Jordan River under this agreement.

# Map of Israel-Jordan-Palestine



# Planning for the negotiation

---

## **The Conflict Relationship**

1. What kind of conflict is this likely to be? Are resources limited and fixed? Is it possible for all parties to achieve their goals?
2. What has been the nature of my relationship with the other party in the past? How might that affect the current negotiations? What kind of future relationship do I want with this party?
3. Am I negotiating just for myself or am I representing the interests of others? Is the other party negotiating for his/her own interests or representing someone else?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

# Planning for the negotiation

---

## Goals

1. What are my tangible (the substantive, objective elements) goals in the negotiation? What tangible goals are most important (what are my priorities)?
2. What are my intangible (psychological factors, such as winning versus losing, protecting one's reputation) goals in the negotiation? What intangible goals are most important (what are my priorities)?
3. What is the relative importance of intangibles to the tangibles?
4. Given what I know about the other party, what are the major common tangible and intangible issues likely to be? Can I be open about the intangible concerns?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

# Planning for the negotiation

---

## Issues

1. What will be the major issues at stake in this negotiation?
2. Do I have all the information I need on each of these issues? If not, where can I get it?
3. Are some issues likely to appear fundamentally non-negotiable?
4. What issues have higher priority and lower priority for me?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>



# Planning for the negotiation

---

## Issues

5. What issues have integrative potential (the possibility of a mutually beneficial outcome)? Are integrative solutions possible? Can issues be linked together or packaged? Are trade-offs feasible? What concerns (if any) can be conceded?
6. Are issues complex? Should they be scaled down into smaller issues (fractionated)?
7. Given my goals, assumptions, and information about the other party, what settlements are possible from this negotiation?
  - a. What is the best settlement I could expect (ideal point)?
  - b. What would be a "fair and reasonable" deal? (target point)?
  - c. What would be a minimally acceptable outcome (resistance point), beyond which I would prefer no agreement?
  - d. Note: Anticipated settlements can be determined issue by issue and/or for the negotiation overall

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

# Planning for the negotiation

---

## Strategic Considerations

1. What is my power in this negotiation?
  - a. What sources of power (resources) could I draw upon if necessary?
  - b. How dependent is the other party upon me? How dependent am I on the other party?
  - c. How committed is the other party to outcomes I control? What is the degree of my commitment?
2. How can I influence the other party? What are my strongest persuasive appeals and arguments?
3. How will the other party likely to try to influence me? What are the other party's strongest persuasive appeals and arguments?
4. What are the weakest points in my overall position and on specific issues?
5. What are the weakest points in the other party's overall position and on specific issues?
6. At this point, should I modify my goals/issues in any way?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

# Planning for the negotiation

---

## **The Negotiation Environment**

1. Where will the negotiation take place? Which party "owns" or controls the site? Is a neutral site preferable?
2. Is the negotiation setting formal or informal? What are the physical arrangements of the site? What is the distance between parties? Does the physical arrangement suggest atmosphere and status concerns?
3. How does the negotiate setting relate to my preferred strategy?
4. Does the negotiation face time constraints? Do deadlines exist?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

# Planning for the negotiation

---

## The Negotiation Process

1. Before the negotiation begins, do procedural rules need to be discussed? Should an agenda be set? What are my most important concerns regarding procedures, rules, and an agenda?
2. What kind of strategy do I want to use in this negotiation (distributive-contending, integrative-collaborative, accommodation-compromise, or a mixed strategy)? What type of tone or climate do I want established?
3. How do I need to get the other negotiator to do to make this strategy work? How can I influence the other party? What tactics can I use to maintain this strategy?
4. If my strategy or plan does not work, what is my fall-back option? What is my BATNA - Best Alternative to a Negotiated Agreement?

Source: <http://oregonstate.edu/instruct/comm440-540/Planning.htm>

---

**Acknowledgements** – This work was supported by the National Socio-Environmental Synthesis Center (SESYNC) under funding received from the National Science Foundation DBI-1052875.

**Creative Commons License:** This work is licensed under the Creative Commons Attribution-NonCommercial 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

