

15 Strategies

**For Keeping Your Audience
Awake, Alert, and Inter-Active!**



Cathy Angell, Coordinator - Coastal Training Program - Padilla Bay Reserve – Washington State



How to Explain Science, Share Data, and Build Trust: Presentation Skills for Scientists and Public Officials



DON'T BE SUCH A SCIENTIST
 TALKING SENSE IN AN AGE OF STYLE
 RANDY OLSON
 OLSON DON'T BE SUCH A SCIENTIST
 ISLAND PRESS

NANCY BARON | ESCAPE FROM THE IVORY TOWER
 ISLAND PRESS

JOHN MEDINA brain rules
 Pear Press

Designing Science Presentations
 A Visual Guide to Figures, Papers, Slides, Posters, and More
 Carter
 AP ACADEMIC PRESS

presentationzen 2nd Edition
 Reynolds
 VOICES THAT MATTER New Riders

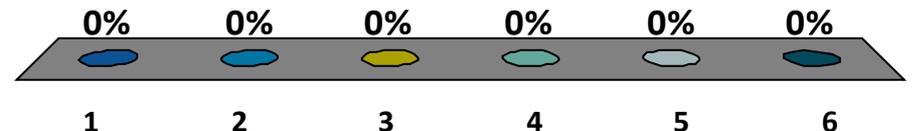
presentationzen DESIGN
 Reynolds
 VOICES THAT MATTER New Riders



Polling Question

Where do you present the most?

1. Public Meetings
2. Conferences
3. Staff Meetings
4. Trainings/Education Programs
5. Meetings with Elected Officials
6. I never give presentations

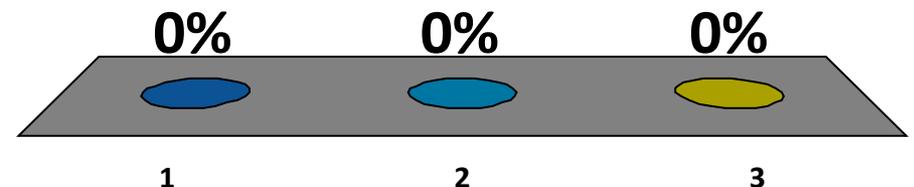




Polling Question:

How comfortable are you with giving presentations?

1. Very comfortable
("I love it!")
2. Somewhat comfortable
("I'll do it if I have to.")
3. Not comfortable
("Please don't make me.")

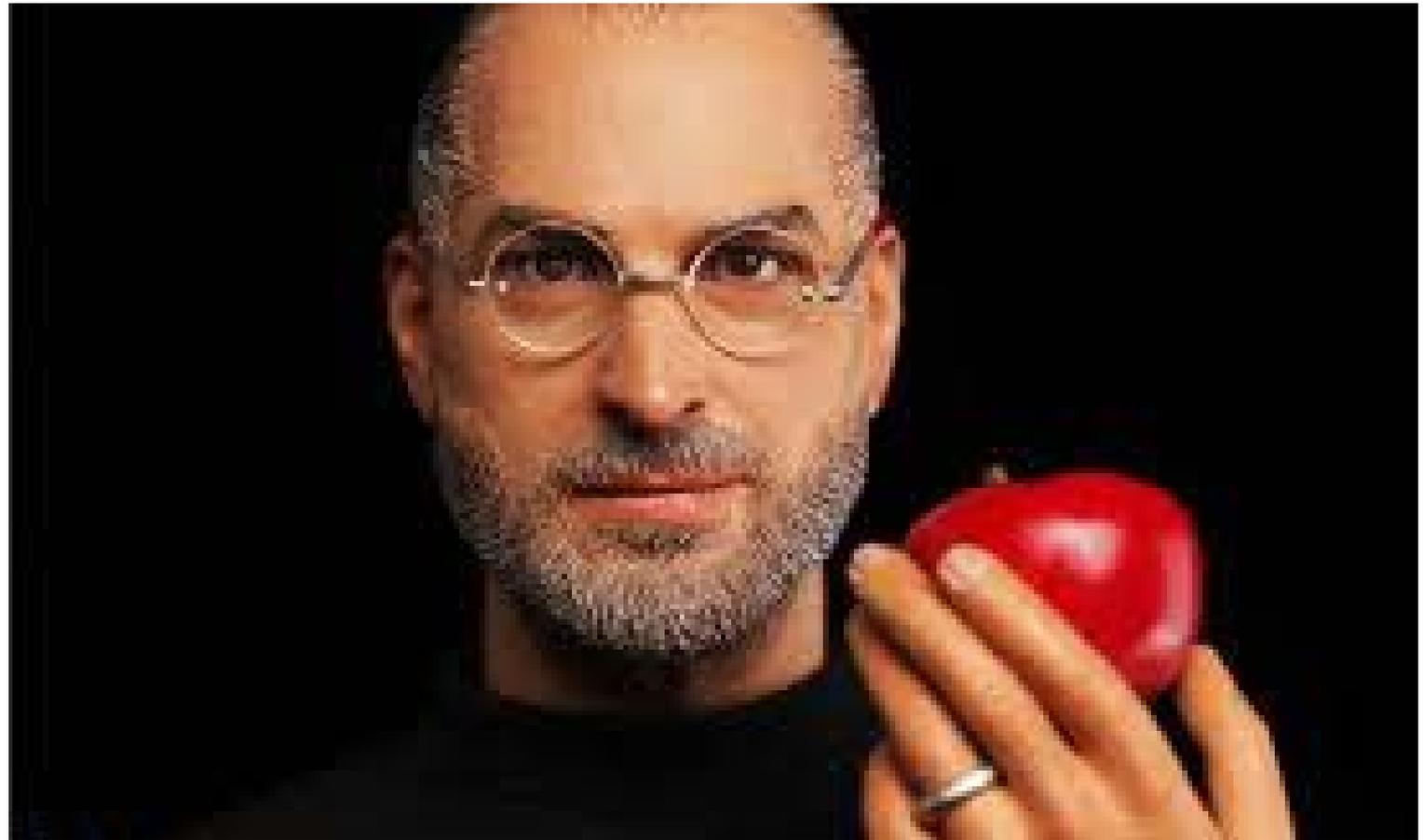




There are simple strategies that will help **ANYONE** become a better and more confident presenter.



Once upon a time....





DankeyHoney

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TITLE HERE

- Lots of bulleted text per page



Death By PowerPoint







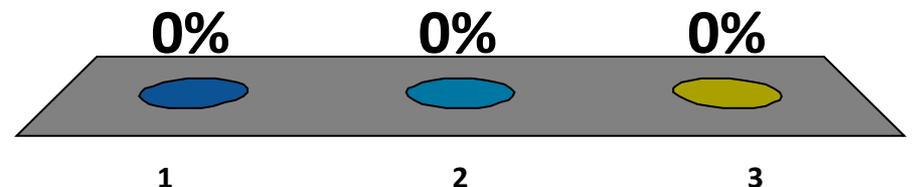
IMHO.



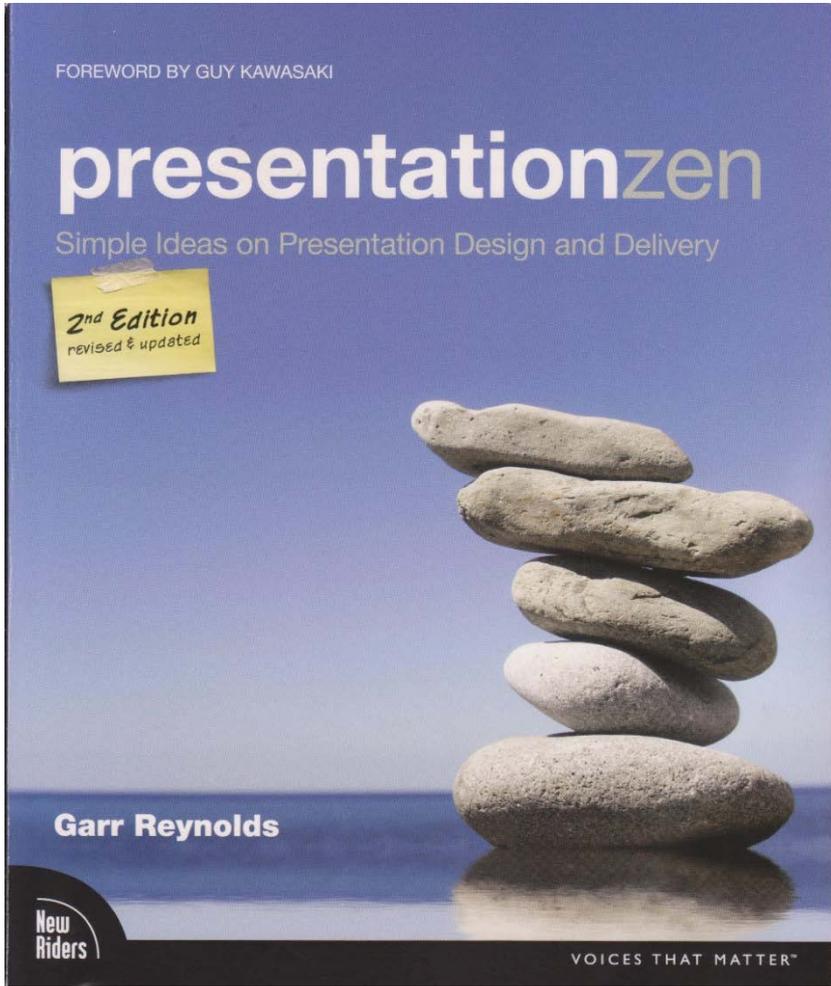
POLLING QUESTION:

Have you ever designed a slideshow that looks more like an outline of all your speaking points?

1. Yes
2. No
3. I can neither confirm nor deny.

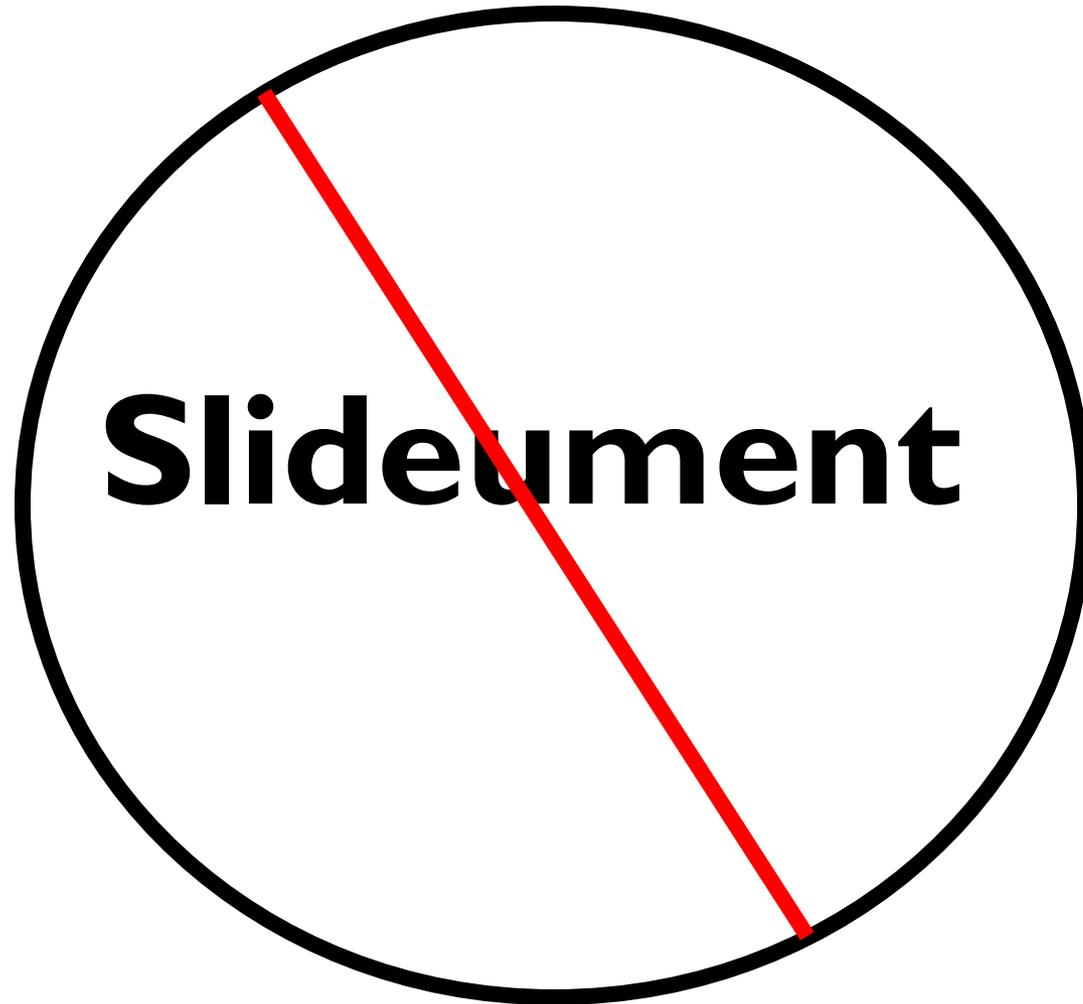








Every. Important. Thing.



Slideument



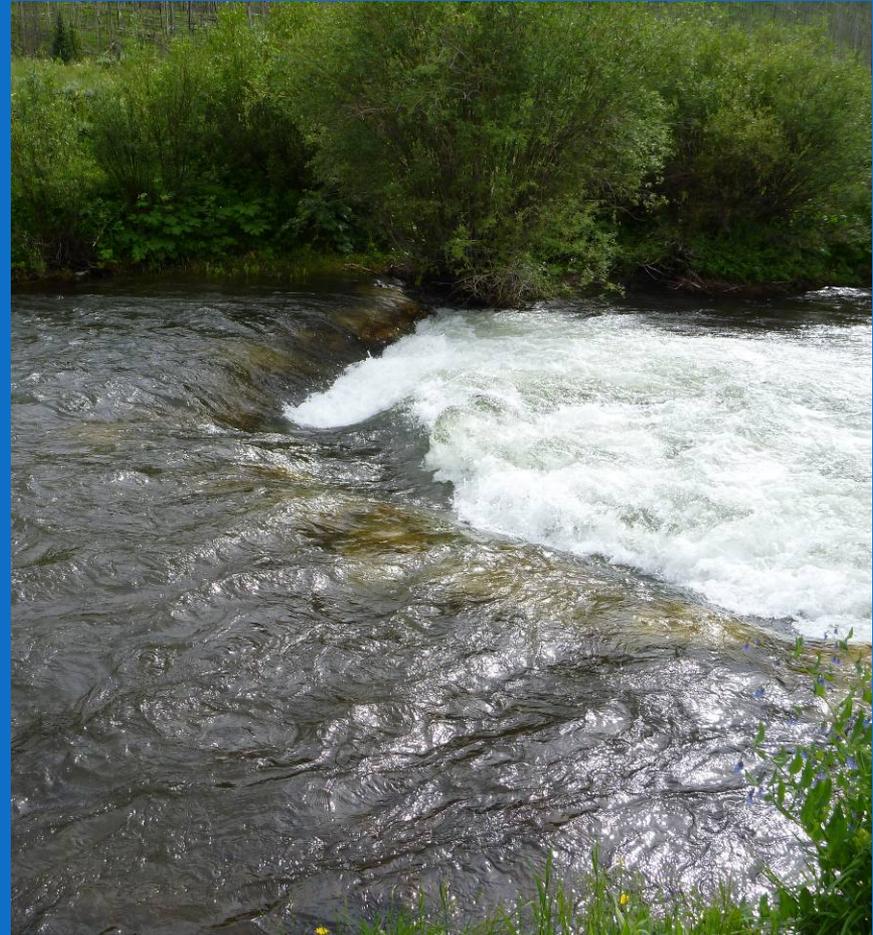
Critical saltwater habitats - standards

Docks, bulkheads, bridges, fill, floats, jetties, utility crossings, and other human-made structures shall not intrude into or over critical saltwater habitats except when all of the conditions below are met:

- The public's need for such an action or structure is clearly demonstrated to protect the *Publics Trust*;
- Alternative alignment or location are not feasible;
- The project (including mitigation), will result in no net loss of ecological functions;
- The project is consistent with the state's interest in resource protection and species recovery.

Design Considerations

- Hydraulic effects
- Scour depth
- Aggradation
- Drag and buoyant forces
- Materials
- Flood impacts
- Channel adjustment
- Safety
- Design life



Example Issue Areas:



Oceans/Puget Sound - Ecology

Ocean Acidification
Sea Level Rise (Global & Local)
Coastal Flooding & Inundation
Saltwater Intrusion
Coastal Erosion (Beaches, Bluffs, Spits)
Algal Blooms
Near-shore Habitat
Fisheries, Shellfish, & Aquaculture
Stormwater management & pollutants
Changes in land ownership boundaries (public/private)
Shoreline Protection/Resilience

Agriculture - Ag

Water availability
Pests: Insects & Plants
Disease (Plant & Animal)
Drought frequency & duration
Crop response to elevated CO2 & Temps
Soil conditions (e.g., erosion, water content)
Food Processing & Distribution
Changes in growing season
Flooding
Plant Genetics
Crop Selection (Global Demand, Water & Energy Supply)

Infrastructure - DOT

Transportation corridors (e.g., critical access, evacuation routes)
Stormwater systems (natural & built)
Coastal (bulkheads, seawalls, storm drains, etc.)
Coastal Rail Corridors
Ports & Marinas
Hatcheries
Airports

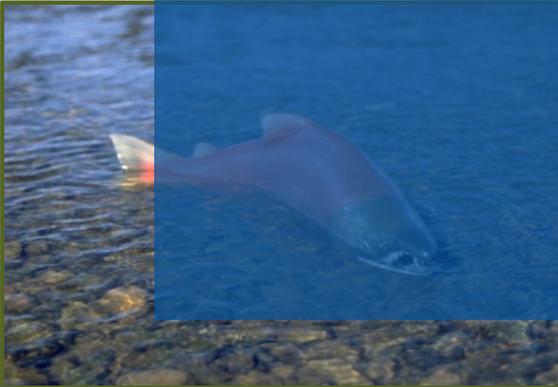


Table II.4: Common Impacts to Kelp and Eelgrass and Key Regulatory and Design Considerations.

<p>Direct/Indirect Impacts</p>	<ul style="list-style-type: none"> ◇ Reduction or loss of beds due to shading by over-water structures ◇ Loss of substrate appropriate for attachment or growth due to beach loss or substrate change from changes in wave energy and other physical processes ◇ Loss of appropriate habitat or direct vegetation impacts due to pilings (shellhash), dredging, prop wash, buoy anchor chain scour, and grounding of boats or structures ◇ Habitat reduction due to reduced light levels from short and long term increases in turbidity ◇ Loss of vegetation (eelgrass) due to increased shading from ulvoids and epiphytes (due to eutrophication)
<p>Cumulative Impacts</p>	<ul style="list-style-type: none"> ◇ Puget Sound wide decrease in nearshore photosynthesis and productivity ◇ Puget Sound wide reduction in kelp and eelgrass and domino affect on numerous species that are directly and indirectly dependent upon them ◇ Increased release of carbon dioxide and potential climatic impacts ◇ Loss in nearshore habitat complexity
<p>Regulatory and Site Design Considerations</p>	<ul style="list-style-type: none"> ◇ Identify all marine vegetation within intertidal and subtidal zones and protect them through appropriate shoreline designation and SMP regulations ◇ Require survey of intertidal and shallow subtidal areas prior to permitting any structures or activities that could impact existing beds ◇ Prohibit placement of overwater structures over marine vegetation ◇ Require structure designs that minimize shading and disturbance of the substrate including from prop wash ◇ Prohibit grounding of floats and rafts ◇ Avoid placement of shoreline armor or other structures that may result in downcutting of the beach, substrate change, or alteration of shoreline physical processes ◇ Require replacement or mitigation for all riparian or aquatic vegetation directly or indirectly lost through shoreline activities

Risk and Uncertainty

- Risk to habitat
- Risk to infrastructure and property
 - Hydraulic impacts
 - Erosion
 - Infrastructure damage
 - Factors of safety
- Risk to public safety
 - Recreation
 - User groups
 - Flooding and erosion hazards
- Uncertainty of technique



Bruce Heiner

The Truth about Text





BP #1

One Concept!





How do we deal with risk
and uncertainty?



Bruce Heiner



Pore Linings



Slope



Key Considerations:

Height of bulkhead

Depth of water at bulkhead

Slope of upland area

Slope of in-water substrate



Huh?



Slides, Notes, **Handouts (Key Points)**

1

2

3



BP #2

“Key Point” Handouts will set you free.



Slide Design





BP #3

Simplicity





Impacts of Sea Level Rise

- Increase in rainfall.
- Increase in stormy weather.
- Significant reduction in glacial ice.
- Warming of oceans.
- 100 year floods will become 10 year floods.
- Risk to low-lying infrastructure.

Sea Level Rise



- Increase in rainfall.
- Increase in stormy weather.
- Significant reduction in glacial ice.
- Warming of oceans.
- 100 year floods will become 10 year floods.
- Risk to low-lying infrastructure.



Every 10 years?



Accelerated sea level rise underscores existing coastal management challenges:

- ❖ **Planning: Guide/contain shoreline development, beware coastal sprawl**
- ❖ **Hazards: Anticipate and avoid, don't just react and rebuild**
- ❖ **Setbacks: from dynamic coastal features - bluffs, beaches, marshes**
- ❖ **Armoring: Decide where you want it, and where you don't, or you'll get it everywhere**
- ❖ **Restoration: Build resilience by restoring and protecting geomorphic processes, not specific habitat configurations**



Answer to sea level rise?





Pictures from Hydrant Erosion





BP #4



Use Large Images.



Tell stories, give examples.



“I call stories *data with a soul*”.

Dr. Brené Brown



Every environmental issue is connected to human activity.



Restraint



Displaying Data

(Oh, no.)

Current World Population – Ranked

(geohive.com)

Ranking	Country	Area Sq. Miles	Population Yesterday	Yearly Growth	Daily Increase	Population Today
WORLD		510,072,000	7,122,015,204	1.10%	211,757	7,122,226,961
1.	China	9,596,960	1,359,046,612	0.45%	16,503	1,359,063,115
2.	India	3,287,590	1,273,608,494	1.34%	46,235	1,273,654,729
3.	United States of America	9,826,630	317,325,329	0.54%	4,649	317,329,977
4.	Indonesia	1,919,440	247,111,993	1.06%	7,100	247,119,093
5.	Brazil	8,511,965	199,898,784	0.86%	4,660	199,903,444
6.	Pakistan	803,940	183,051,304	1.91%	9,394	183,060,698
7.	Nigeria	923,768	170,489,971	2.56%	11,699	170,501,670
8.	Bangladesh	144,000	154,275,610	1.35%	5,657	154,281,267
9.	Russian Federation	17,075,200	142,415,726	-0.22%	-871	142,414,855
10.	Japan	377,835	126,301,824	-0.12%	-403	126,301,421
11.	Mexico	1,972,550	117,586,657	1.37%	4,363	117,591,020
12.	Philippines	300,000	98,112,869	1.88%	4,974	98,117,843
13.	Viet Nam	329,560	90,594,834	1.07%	2,620	90,597,454
14.	Ethiopia	1,127,127	88,170,001	2.09%	4,944	88,174,945

“Thoughtfully planned handouts at your talk tell the audience that you are serious and precise; that you seek to leave traces and have consequences. And that you respect your audience.”

-Edward Tufte

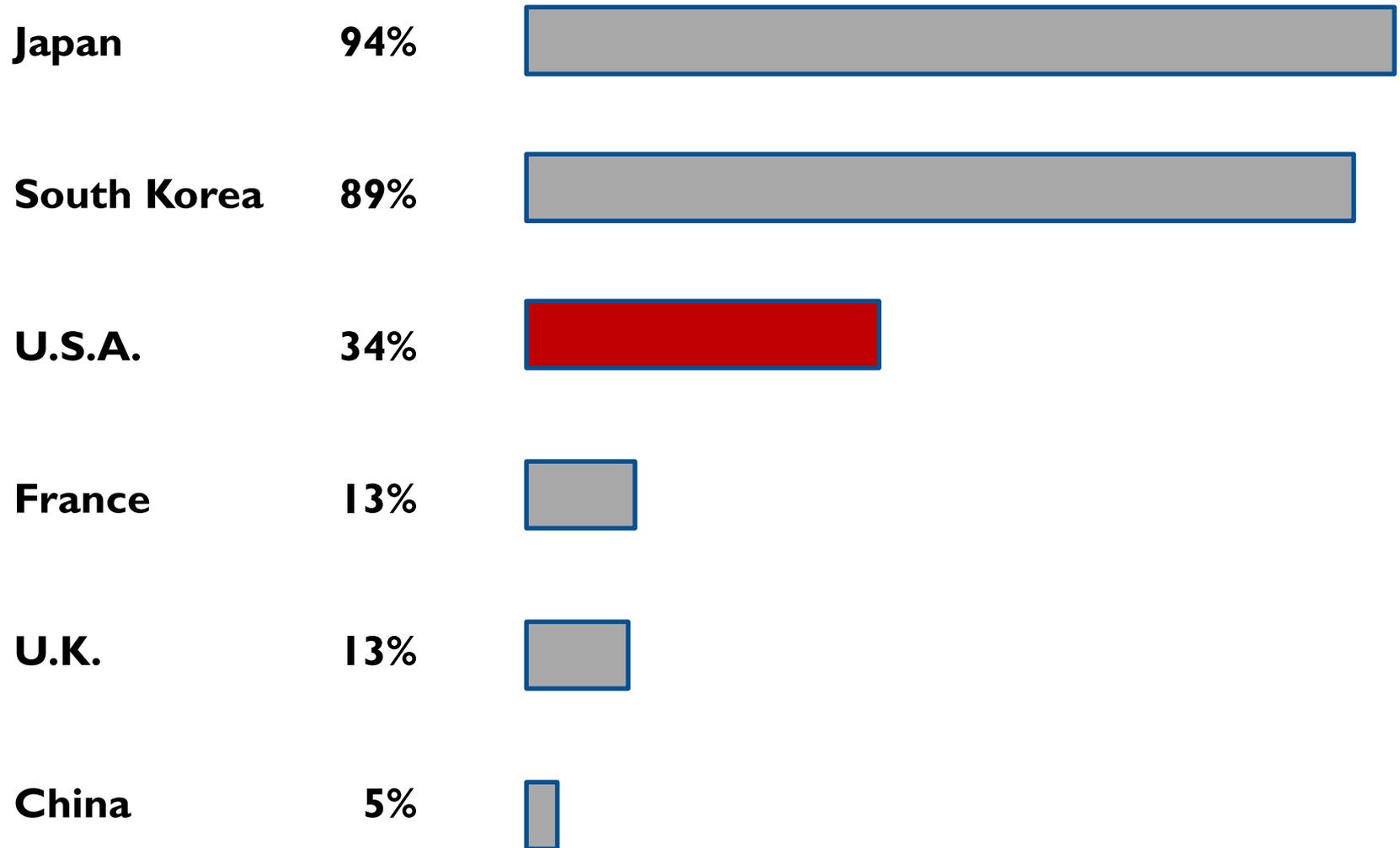


China is close in size to the United States but has a billion more people.

	Area Sq. Miles	Growth Rate	Daily Increase	Population
1. China	9,596,960	0.45%	16,503	1,359,063,115
3. United States	9,826,630	0.54%	4,649	317,329,977



We connect to the internet much more slowly.



We can expect about a 6% increase in precipitation over next 80 years.

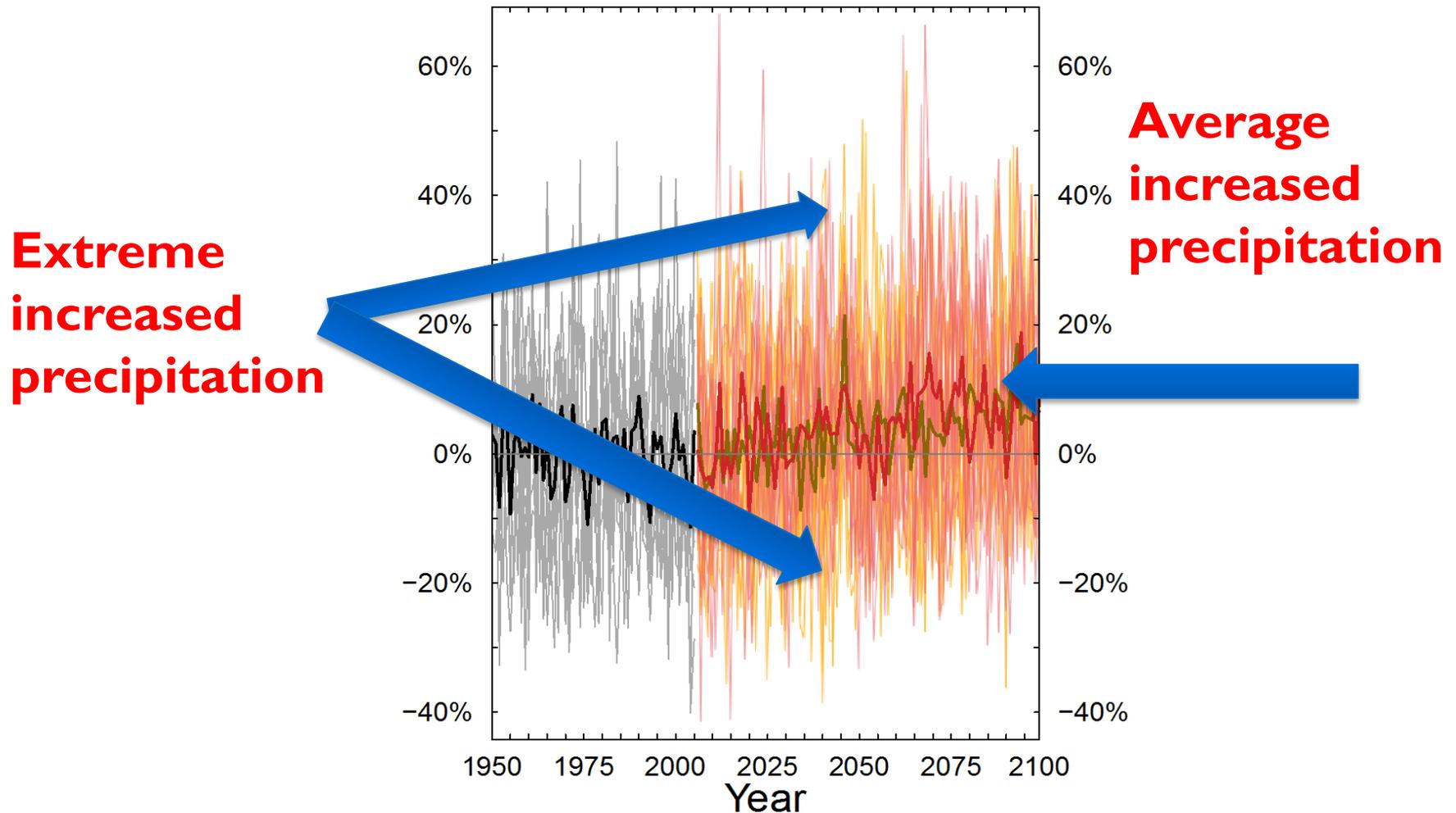
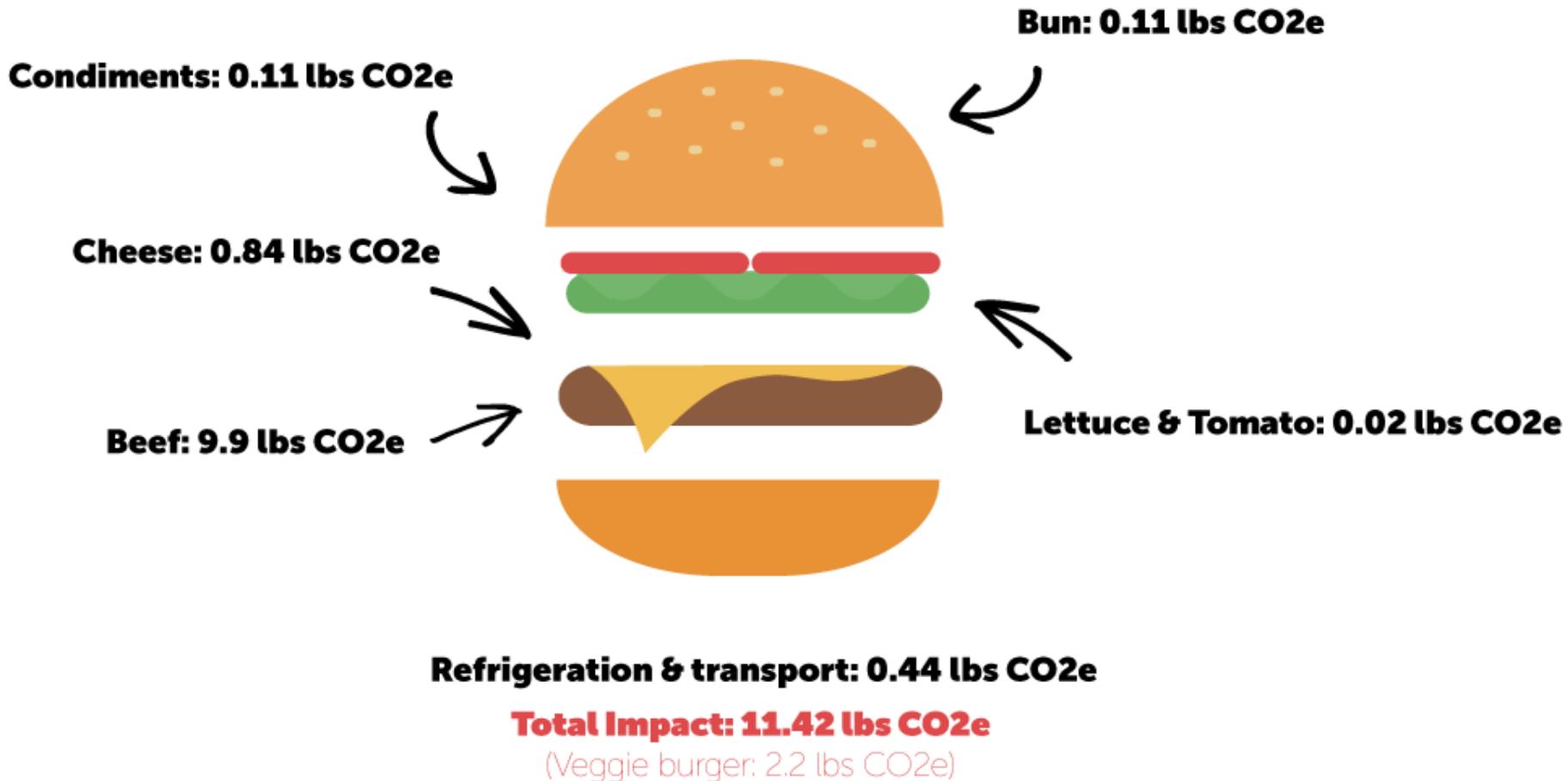
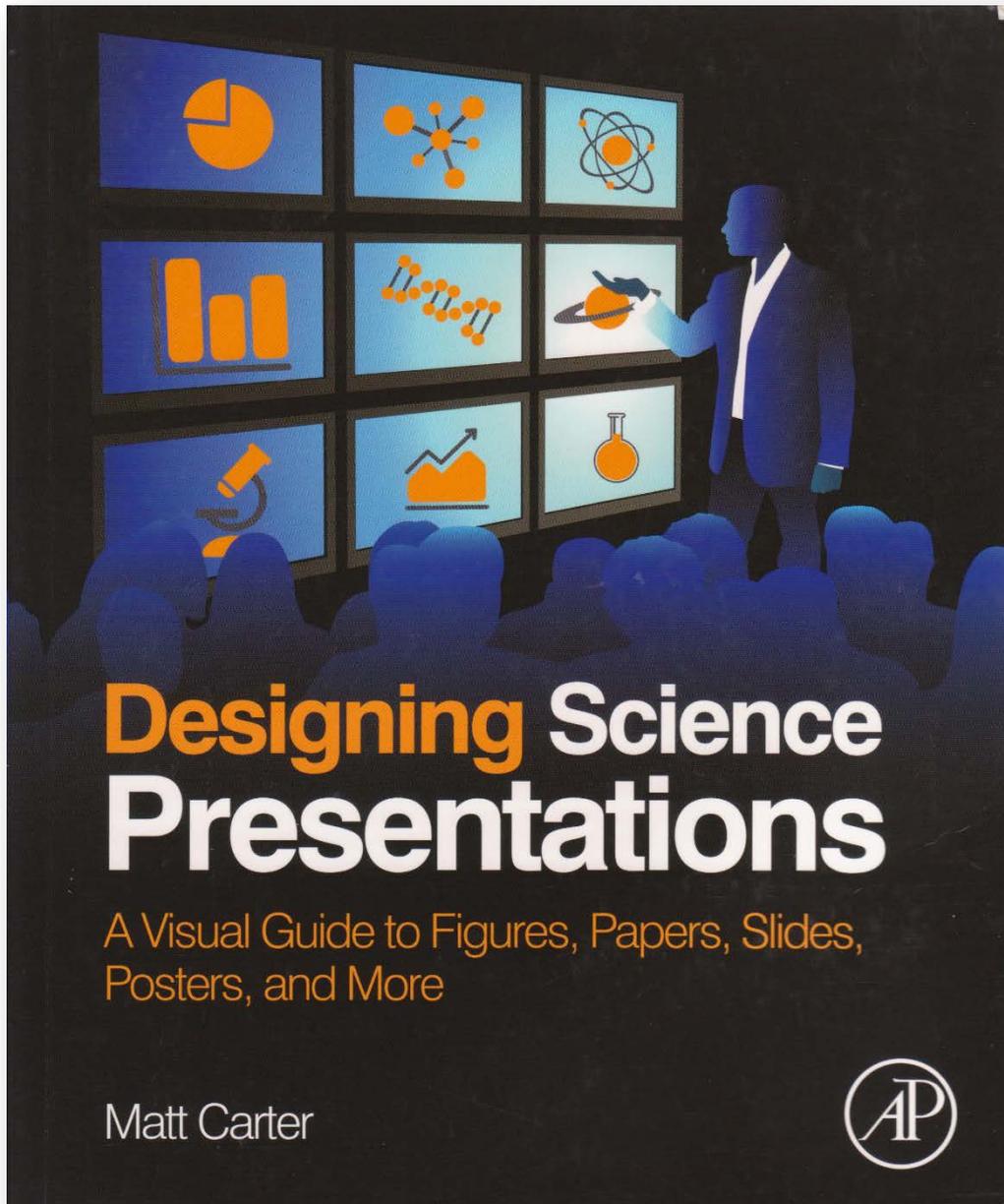


Figure source: Climate Impacts Group

Eating a cheeseburger is the rough equivalent of driving 13 miles.





Designing Science Presentations

A Visual Guide to Figures, Papers, Slides, Posters, and More

Matt Carter



Maps



Padilla Bay Reserve

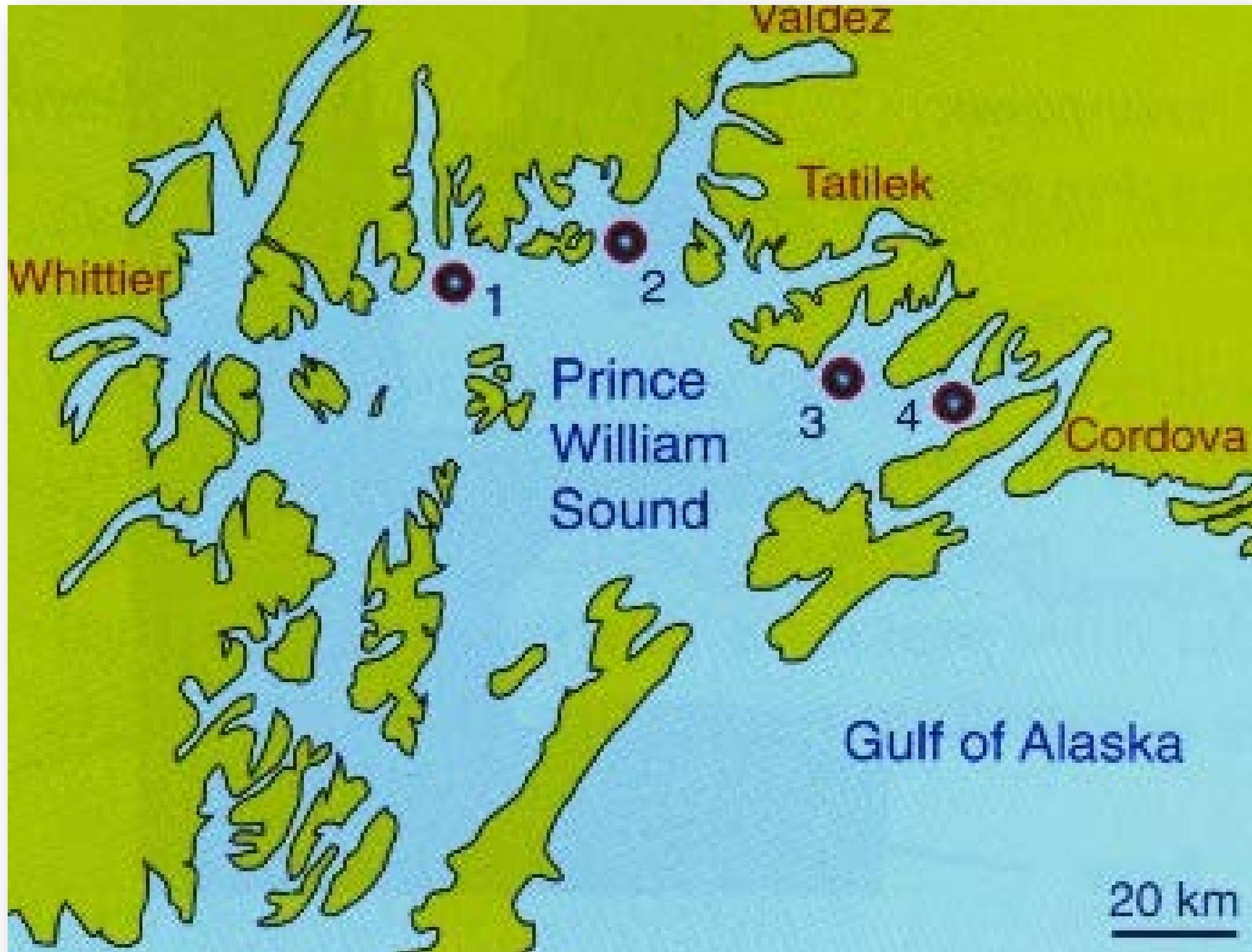




Vancouver Island

Padilla Bay Reserve

2





○ Padilla Bay NERR

Hat Is.
↓

Saddlebag Is.
↓

Samish Island

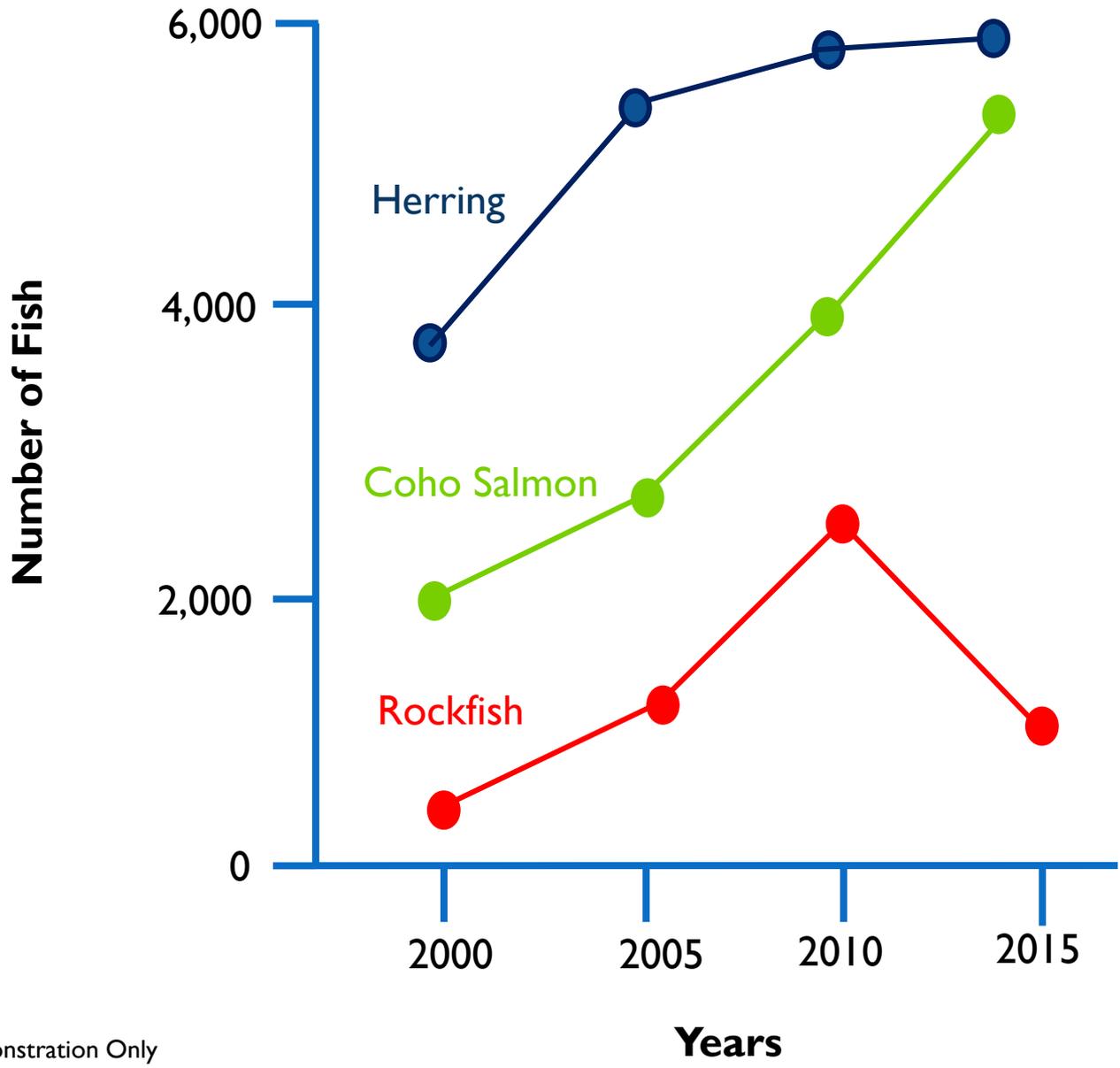


BP #7

When using maps, show the global scale before focusing on the small scale - and always include a point of reference.



Animating Information



BP #8

Animate datasets on a graph
so that each set enters one at a time.



BP #9

Use contrast!

Use contrast!

Use contrast!

Not so good

Not so good

Not so good



Never this!



BP #10

Use the  Key.



BP #11

Interact with your audience.

BP #12

Use “before” and “after” slides to show contrast.



BEFORE



AFTER



Be prudent with your font size.

Font size 18

Font size 20

Font size 24

Font size 28

Font size 32

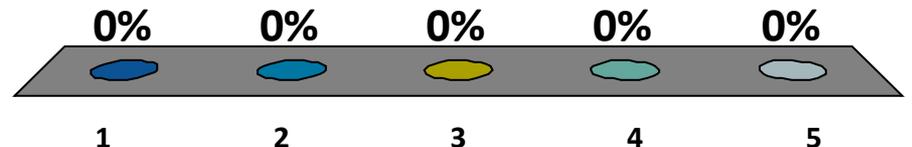
Font size 36



POLLING QUESTION:

Which font size could you comfortably see?

1. Font size 18
2. Font size 24
3. Font size 28
4. Font size 32
5. Font size 36





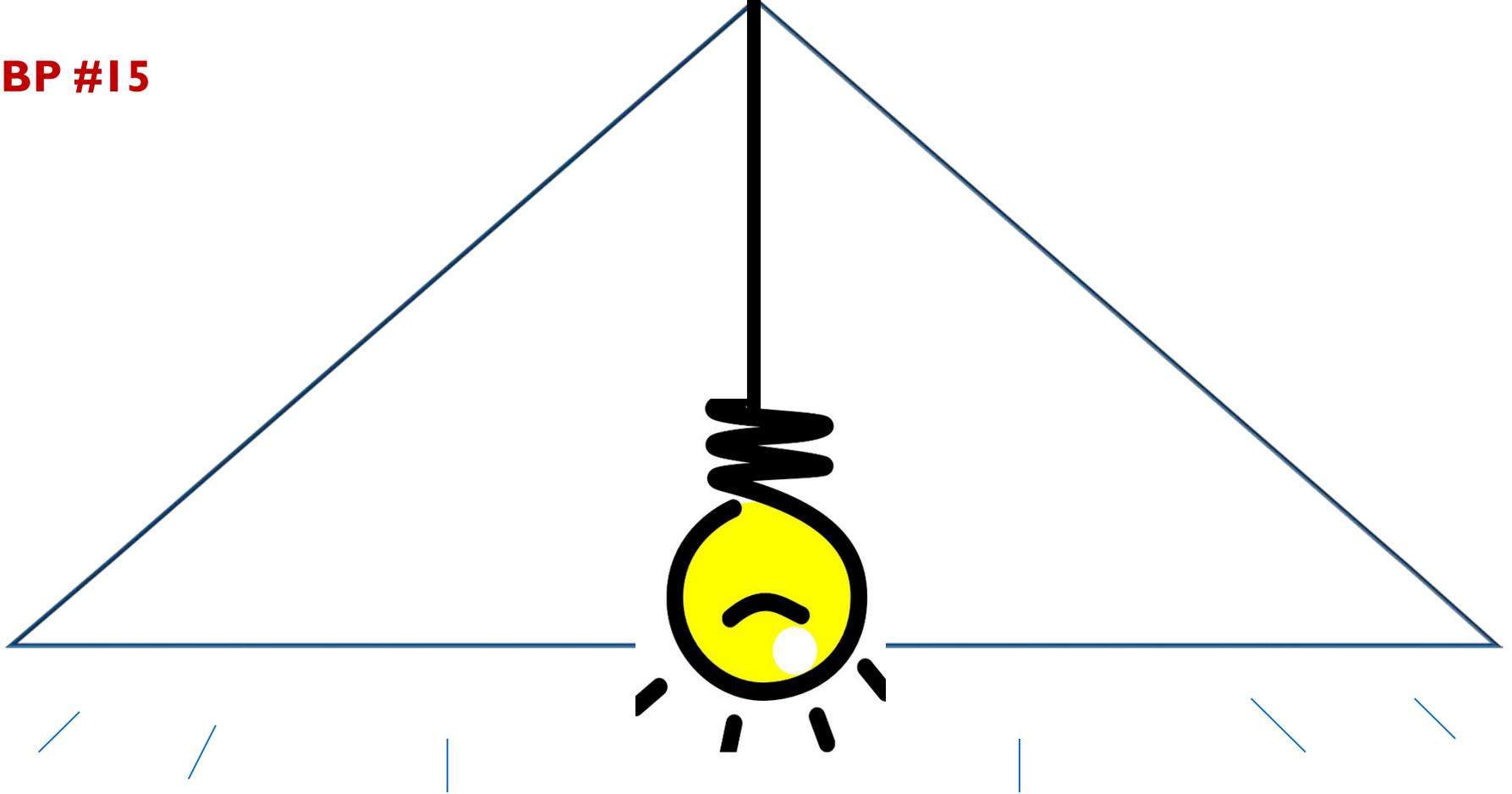
BP #14

Release the Template.





BP #15



Be illuminated, as well as illuminating.

Questions?



Cathy Angell, Coordinator
cangell@padillabay.gov

