

Communicating Park Science

A Second Century Stewardship Workshop

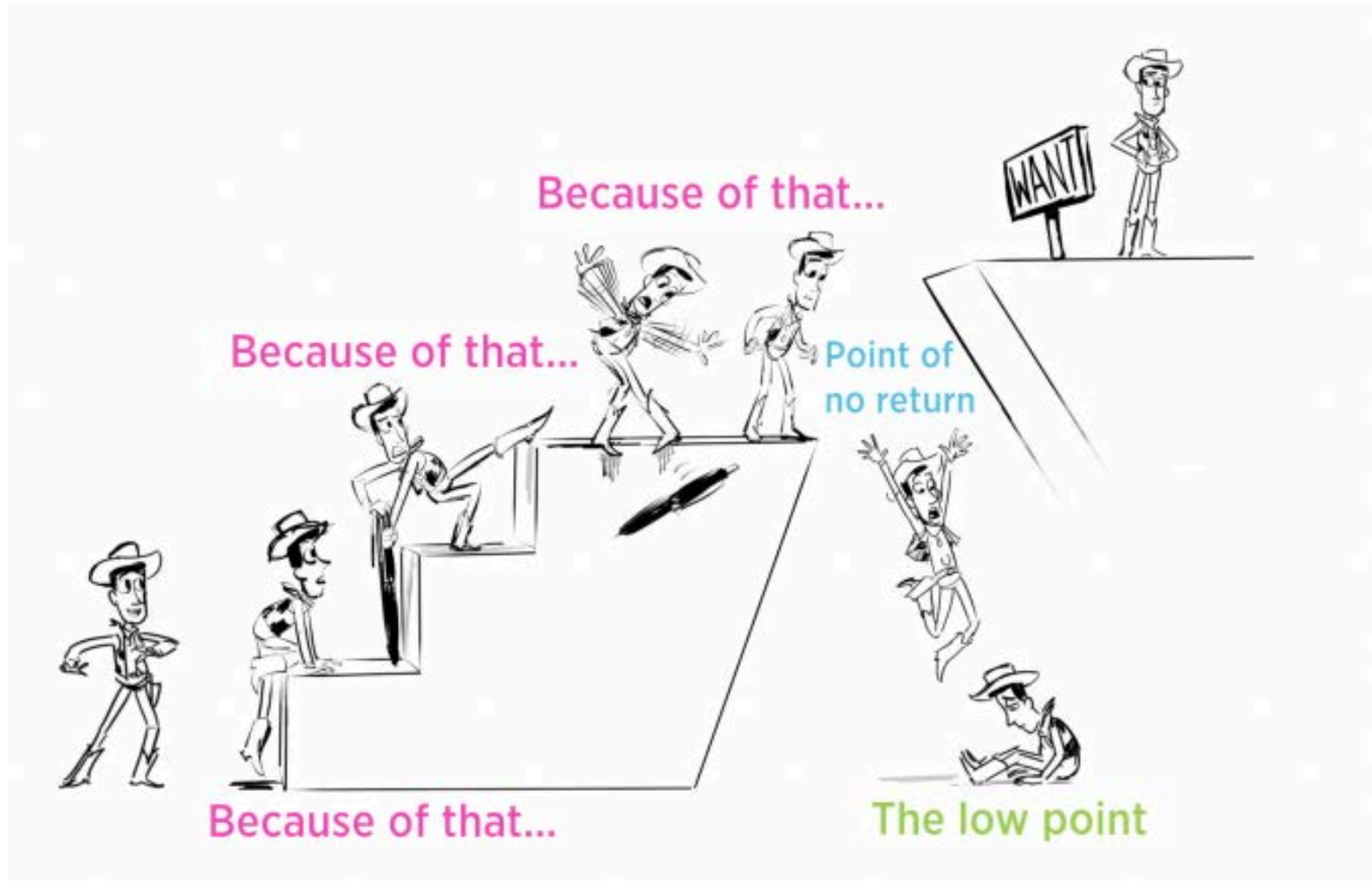
18-20 November
Asilomar

Engaging your audience: language

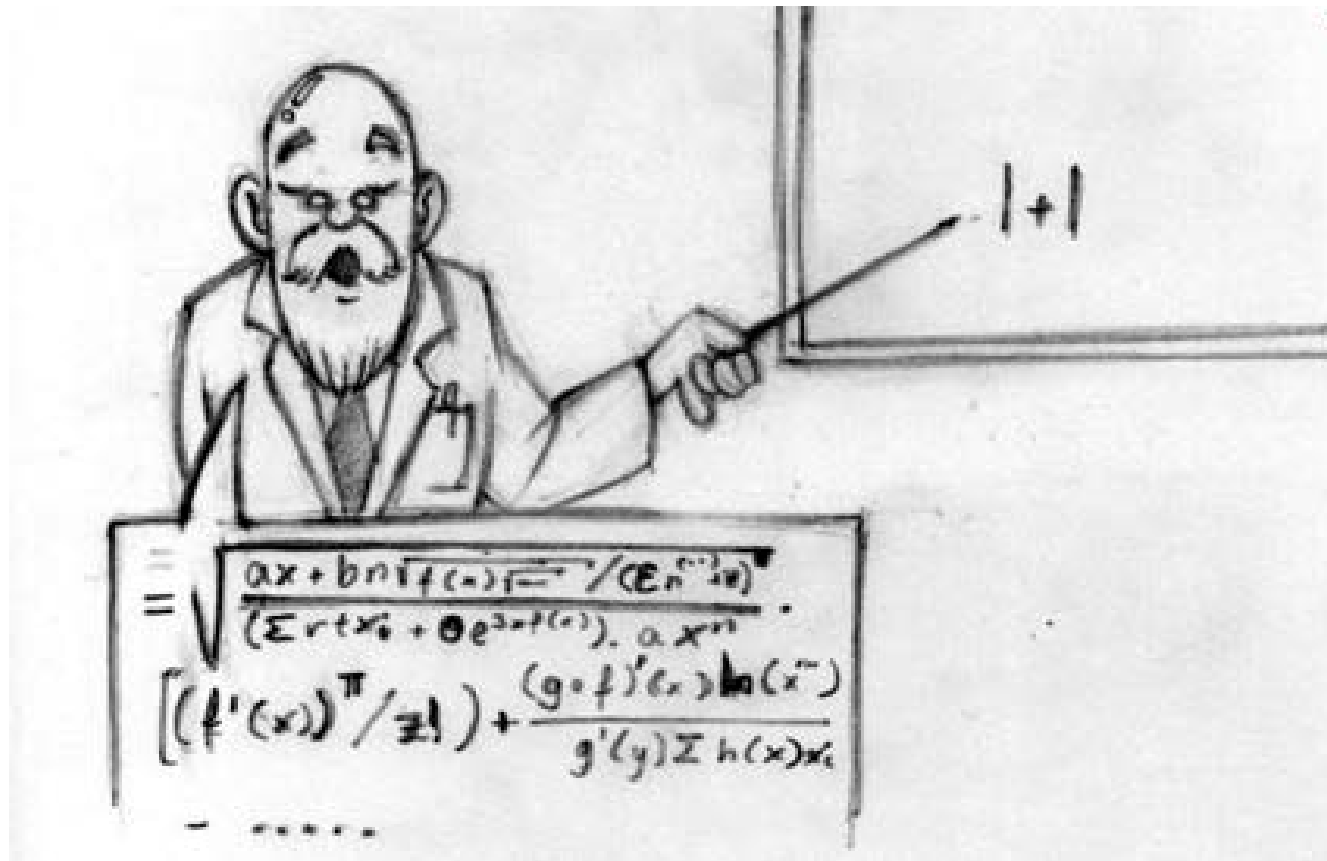
What's
your
story?



Engaging your audience: language



Engaging your audience: language



graphic by Doruk Golcu

Engaging your audience: language



Engaging your audience: language

Simple language. No jargon. No acronyms.

Terms that have different meanings for scientists and the public		
Scientific term	Public meaning	Better choice
enhance	improve	intensify, increase
aerosol	spray can	tiny atmospheric particle
positive trend	good trend	upward trend
positive feedback	good response, praise	vicious cycle, self-reinforcing cycle
theory	hunch, speculation	scientific understanding
uncertainty	ignorance	range
error	mistake, wrong, incorrect	difference from exact true number
bias	distortion, political motive	offset from an observation
sign	indication, astrological sign	plus or minus sign
values	ethics, monetary value	numbers, quantity
manipulation	illicit tampering	scientific data processing
scheme	devious plot	systematic plan
anomaly	abnormal occurrence	change from long-term average

prioritization

hit list

best option, best chance

biodiversity

wildlife

protecting local plants and animals

experiment

tinkering

we designed a study , test

Engaging your audience: language

US SPACE TEAM'S
UP GOER FIVE

THE ONLY FLYING SPACE CAR THAT'S
TAKEN ANYONE TO ANOTHER WORLD

(EXPLAINED USING ONLY THE TEN HUNDRED
WORDS PEOPLE USE THE MOST OFTEN)

THING TO HELP PEOPLE ESCAPE REALLY FAST
IF THERE'S A PROBLEM AND EVERYTHING IS ON
FIRE, SO THEY DECIDE NOT TO GO TO SPACE

STUFF TO BURN TO MAKE THE BOX WITH
THE PEOPLE IN IT ESCAPE REALLY FAST

THING TO CONTROL WHICH DIRECTION
THE ESCAPING PEOPLE GO

PLACE WHERE FIRE COMES
OUT TO HELP THEM ESCAPE

PEOPLE BOX

DOOR

CHAIRS

COLD AIR FOR BURNING (AND BREATHING)
THIS PART HAD A VERY BIG PROBLEM ONCE

PART THAT GOES ALONG TO GIVE PEOPLE
AIR, WATER, COMPUTERS, AND STUFF.
IT COMES BACK HOME WITH THEM
BUT BURNS UP WITHOUT LANDING.

PART THAT FLIES DOWN
TO THE OTHER WORLD WITH
THE PEOPLE INSIDE

PART THAT STAYS ON
THE OTHER WORLD
(IT'S STILL THERE)

[HINTS](#) [TOP](#) [LATEST](#) [LIBRARY](#) [RANDOM](#)

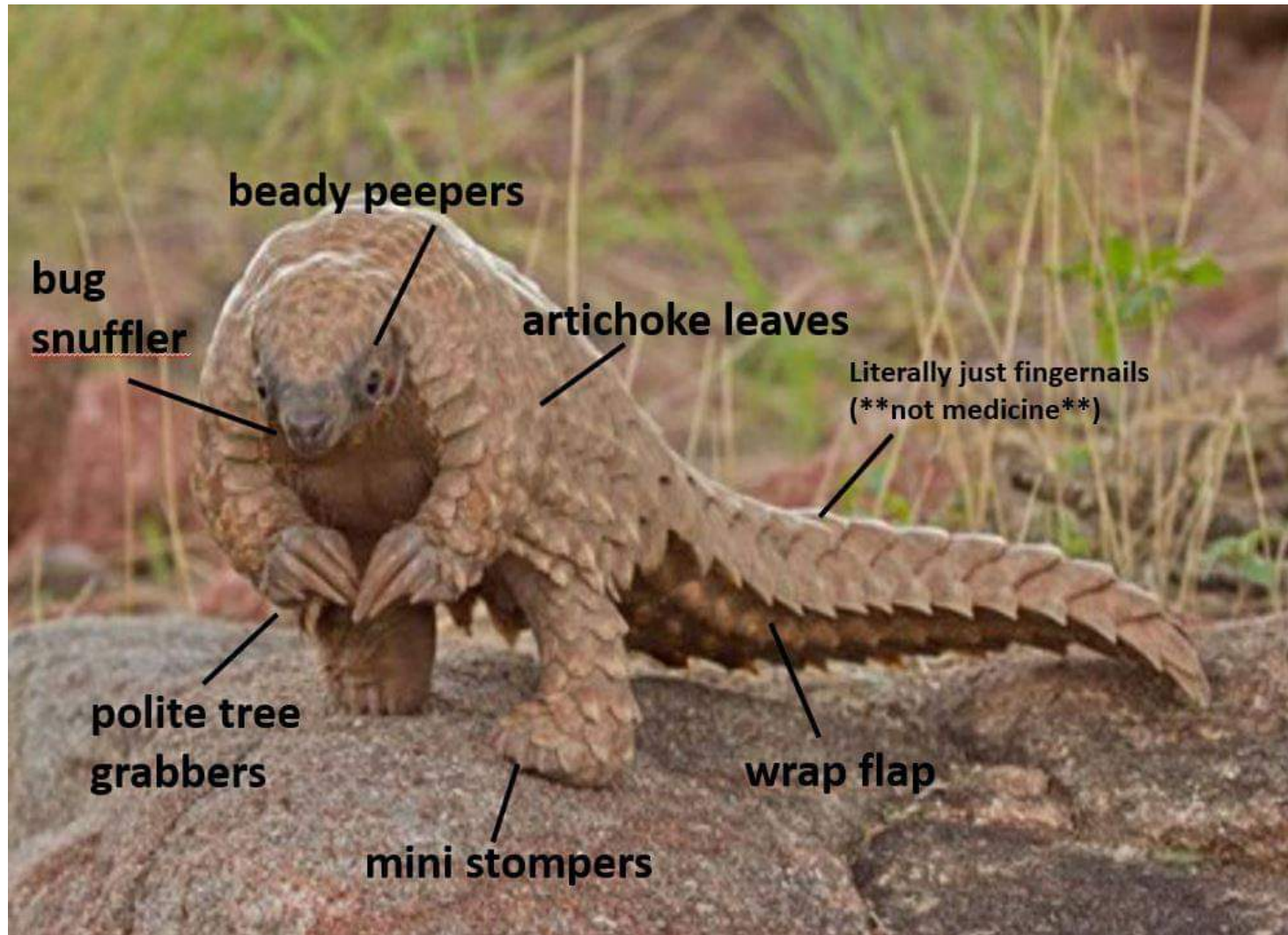


THE UP-GOER FIVE TEXT EDITOR

CAN YOU EXPLAIN A HARD IDEA USING ONLY THE [TEN HUNDRED](#) MOST USED WORDS? IT'S NOT VERY EASY. TYPE IN THE BOX TO TRY IT OUT.

<http://splasho.com/upgoer5/>

Engaging your audience: language



#UnscienceAnAnimal by @masselouxgarou

Engaging your audience: language

The data seem to suggest that there might be a possible effect on some as yet undetermined organism, but we can't really be sure until we continue the experiments for a few years, and even then it will be difficult to say with much confidence whether or not....



Engaging your audience: near and now



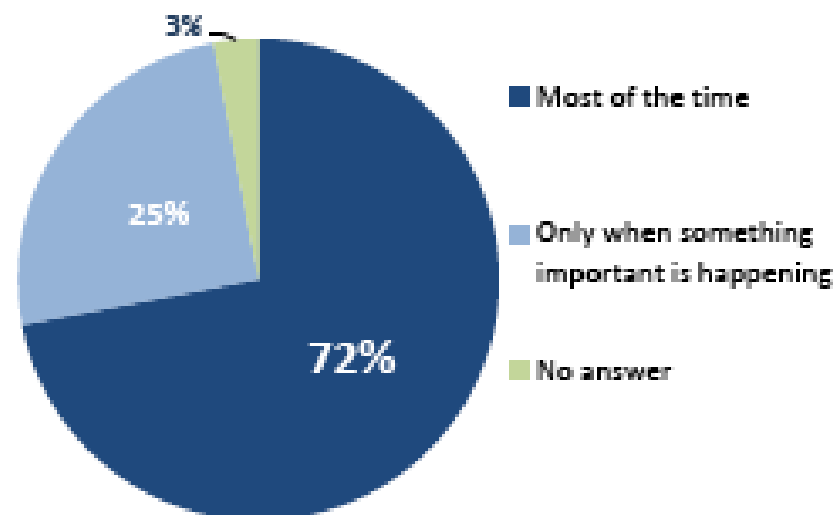
Engaging your audience: near and now



Engaging your audience: here and now

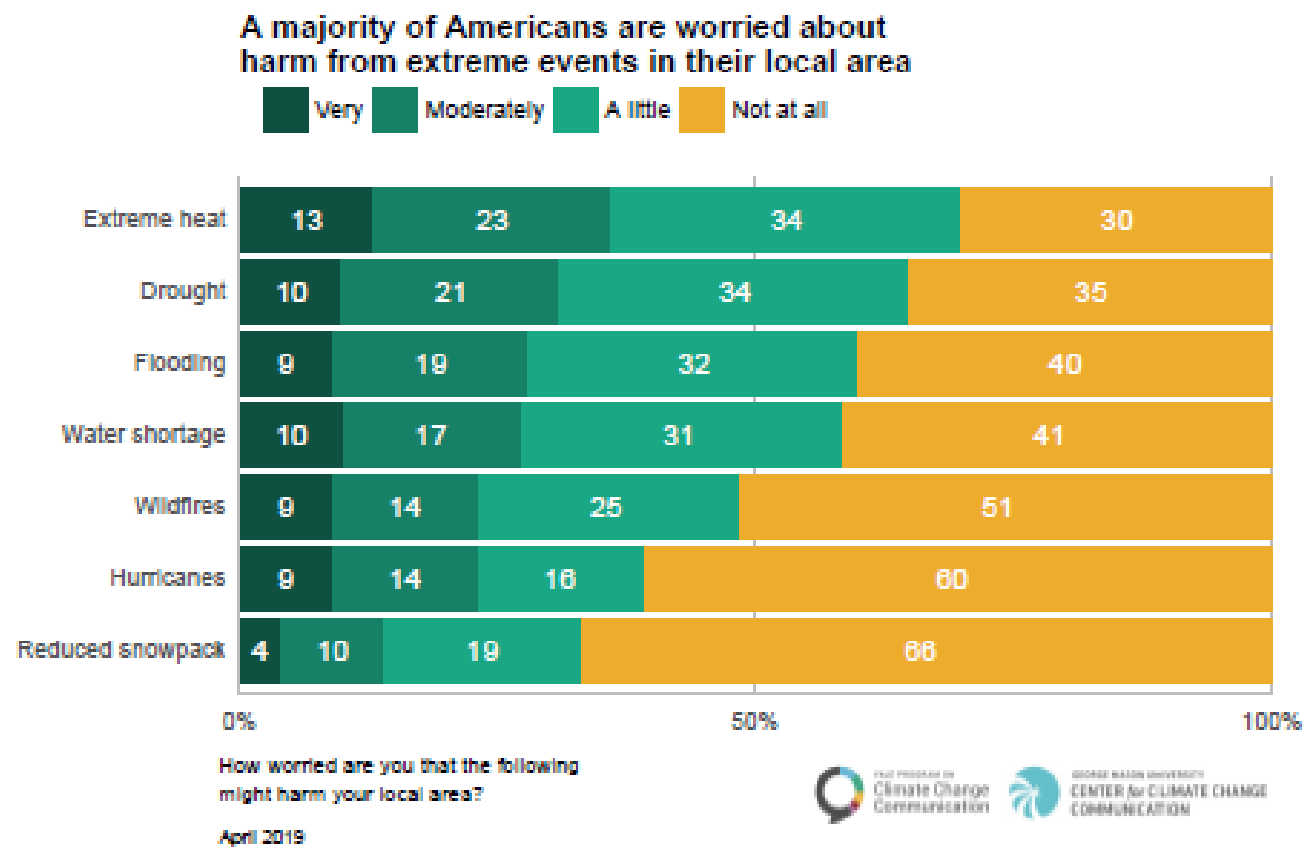
The majority of adults follow local news most of the time

% of adults who follow local news...



Source: The Pew Research Center's Internet & American Life Project Local News Survey, January 12-25, 2011. N=2,251 adults, age 18 and older, including 750 cell phone interviews. Interviews were conducted in English and Spanish. The margin of error for the total sample is plus or minus 2.4 percentage points.

Engaging your audience: here and now



Engaging your audience: near and now

Washout leaves woman 'trapped'
Freeport resident has no way to get home, big bill for private road

BY KATE GARDNER
THE FORECASTER

Portland still adding up storm damage

BY DAVID HARRY
THE FORECASTER

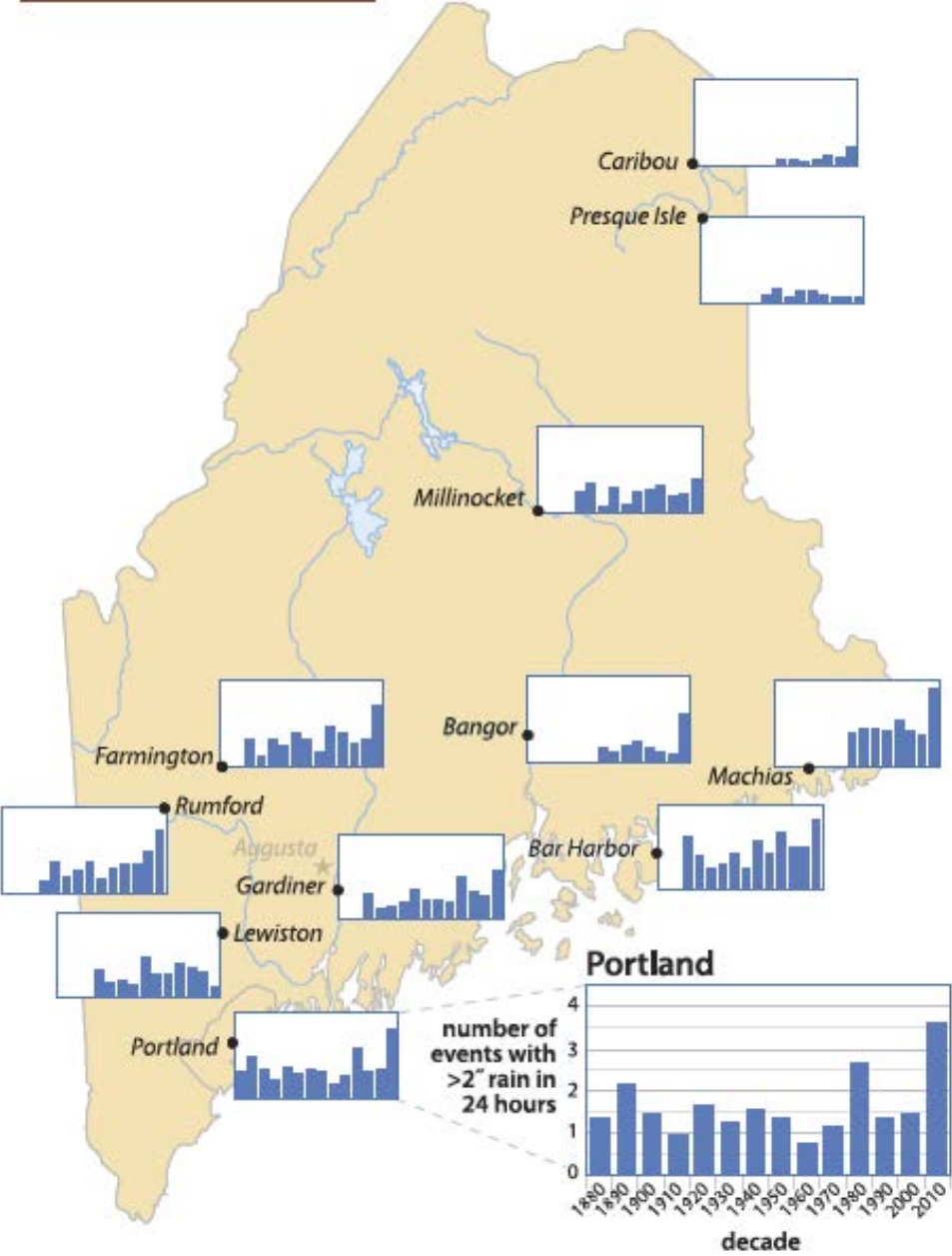
Freeport reopens roads washed out by storm

BY KATE GARDNER
THE FORECASTER

Brunswick storm damage cost doubles
Federal aid remains unlikely

BY PETER L. MCGUIRE
THE FORECASTER

Bangor Daily News, Thursday, August 21, 2014 C7



Engaging your audience: making it local

Current and Projected Forest Cover in the Northeast

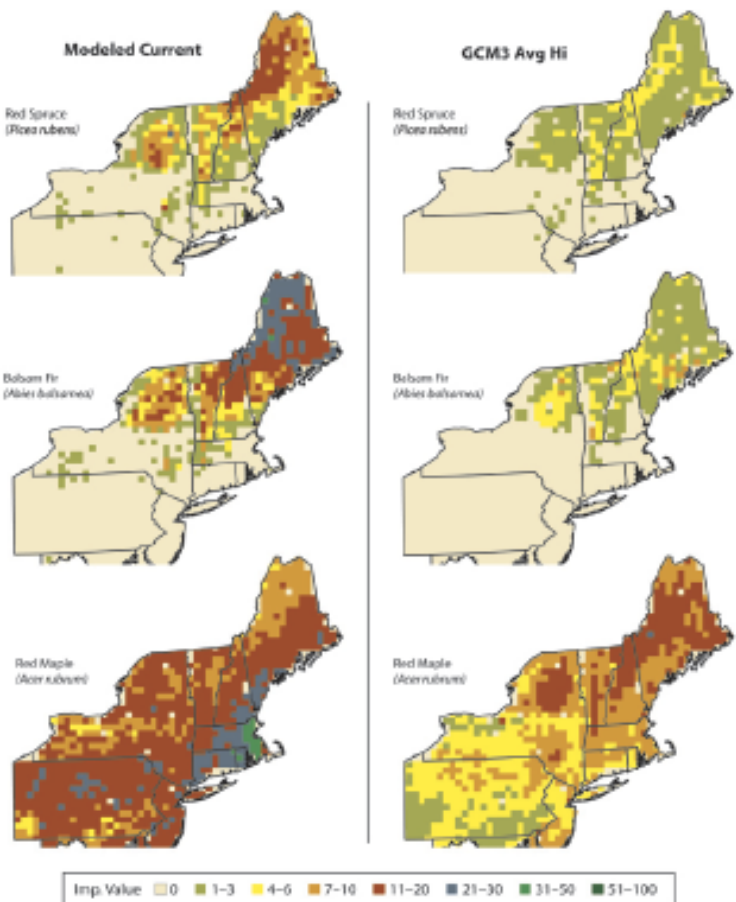


Figure 17 Maps showing modeled current and predicted future ranges for three important Maine tree species based on Forest Inventory and Analysis (FIA) data (Prasad et al. 2007) and 38 predictor variables. Future model projections were made using the average of three general circulation models (GCM3AvgHi), and the high future greenhouse gas emission scenario (A1FI) for potential suitable tree habitat in the year 2100 (Weaver et al. 2008). Importance values reflect species basal area and number of stems as determined by FIA protocols.

Maine's Climate Future

Indigenous Peoples

Team Leader John Daigle

Authors John Daigle¹ and David Putnam²

Reviewers John Banks,³ Steve Crawford,⁴ Ivan Fernandez,⁵ George Jacobson,⁶ Alan Kimball,¹ Bonnie Newsom,⁷ Darren Ranco,⁸ Brian Robinson,⁸ David Sanger,⁸ Lois Stack,⁸ and Sharri Venno¹⁰

A strong and multifaceted dependence on natural resources makes indigenous populations around the world, and in Maine, particularly vulnerable to climate change.

Maine's four recognized Wabanaki tribes face geographical range changes of plant and animal species, and a potential loss of traditional resources, affecting tribal culture, economies, and government budgets.

The livelihoods of Maine's indigenous peoples may very well depend on their abilities to adapt to change now.



Photo courtesy of Deborah Robinson

used by damaging periods of drought and loss of protective alled the emerald ash borer, bringing fear to the Wabanaki

Ice-out Records for Selected Maine Lakes

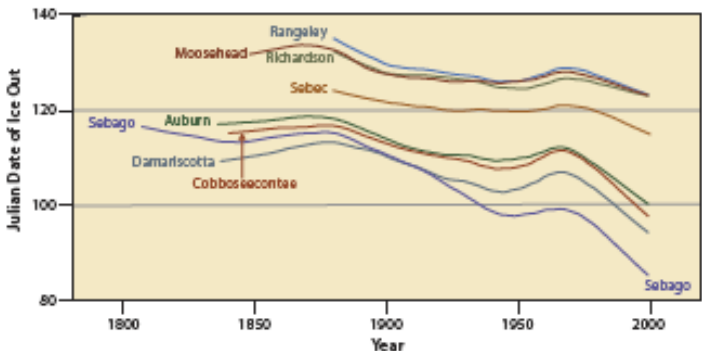


Figure 15b Lake ice-out dates, or the dates of ice break-up, are the annual dates in spring when winter ice cover leaves a lake. Lake ice-out dates in Maine have advanced by up to two weeks since the 1800s (Hodgkins et al. 2002).

Engaging your audience: here and now

The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment

Climate change is a significant threat to the health of the American people. This scientific assessment examines how climate change is already affecting human health and the changes that may occur in the future.



Engaging your audience: everyone likes winning

2006



2008

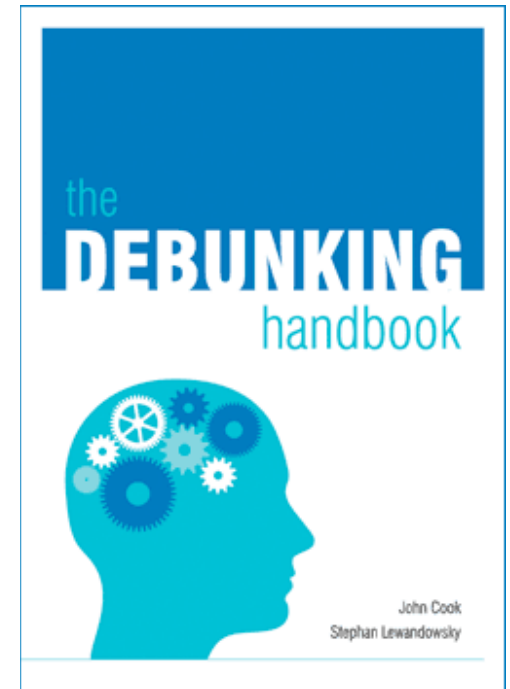


Engaging your audience: be positive

Positive phrasing:

“Studies continue to show that vaccines are **not** associated with autism-spectrum disorders.” cdc.gov 2012

“Most cases of autism appear to be caused by a combination of autism risk genes and environmental factors influencing early brain development.”
autismspeaks.org, 2013



<http://www.skepticalscience.com>

Engaging your audience: connect attitude with action



Engaging your audience: connect attitude with action

TOUR OUR RESILIENT COAST



You're invited!

Please join us Saturday June 29, 2013 at 9:00 AM for a tour of coastal properties in York County that are more resilient to flooding, erosion and extreme storm events. Learn from professionals and coastal property owners about the steps you can take to protect your property.



WHEN: Saturday June 29
9:00 AM - 4:00 PM

WHERE: Wells, Old Orchard
Beach and Kennebunk

Registration fee: \$20 includes:

- transportation from Saco Park & Ride to coastal property sites and back to Park & Ride
- morning snacks and coffee
- catered lunch
- information packet

Space is limited to 20
RSVP TODAY!

207-646-1555 EXT. 113
alexander.gray@umit.maine.edu



CONTACT: **MAINE SEA GRANT** FOR MORE INFORMATION AND TO RESERVE YOUR PLACE ON THIS INFORMATIVE TOUR

CALL: 207-646-1555 EXT. 113 OR EMAIL: alexander.gray@umit.maine.edu
<http://www.seagrants.maine.edu/coastal-hazards-guide>

Engaging your audience: shared identities



STANDARD AND INVESTMENT & TRADING CO.
OUTDOORS

Spring tradition: Anglers vied to catch Penobscot's presidential salmon



Engaging your audience: shared identities

"The dam is not going to last forever. It's not permanent. Eventually Mother Nature will take the dams over. Let's not wait until that point. There may be a better way to memorialize the mills and preserve the historic integrity of the sites."

- Andy Goode, Atlantic Salmon Federation

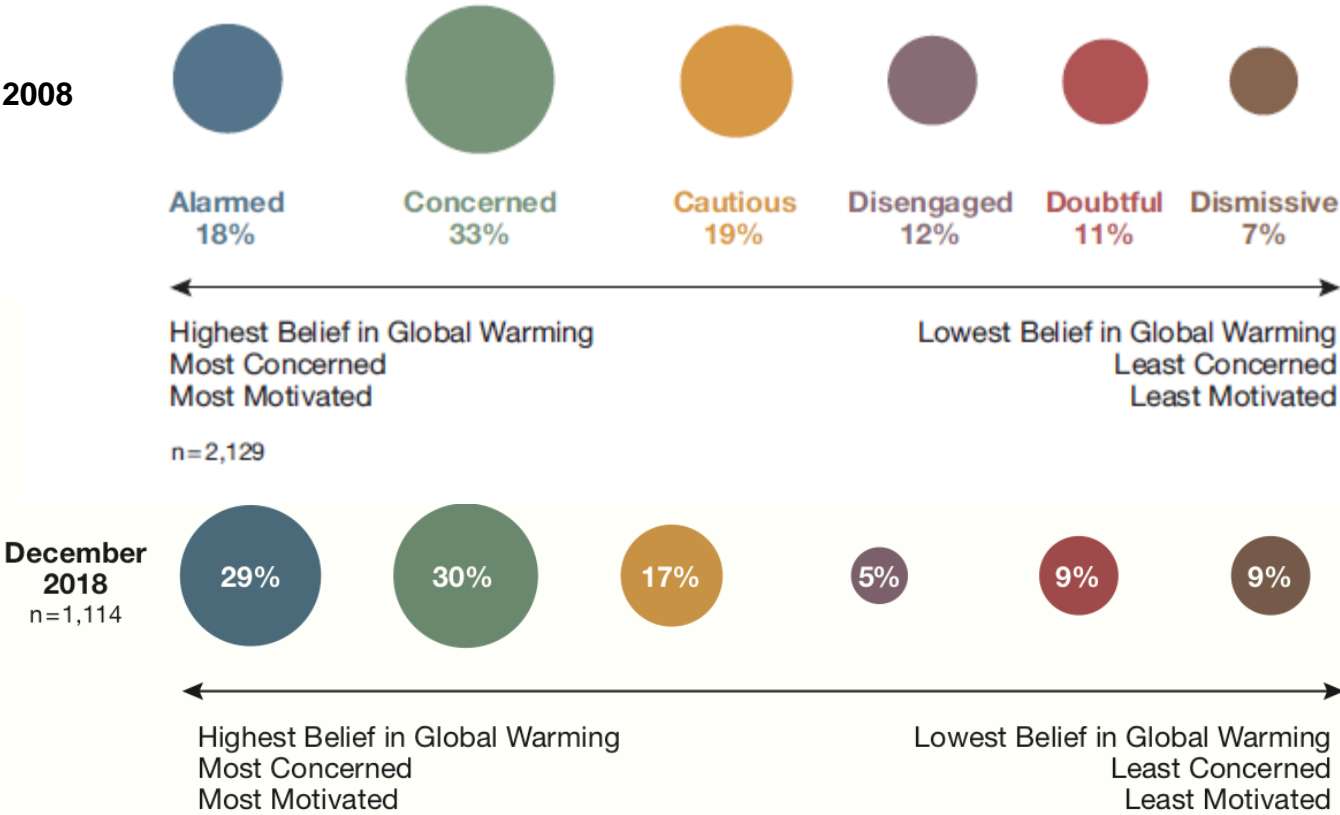


Understanding your audience: facts matter



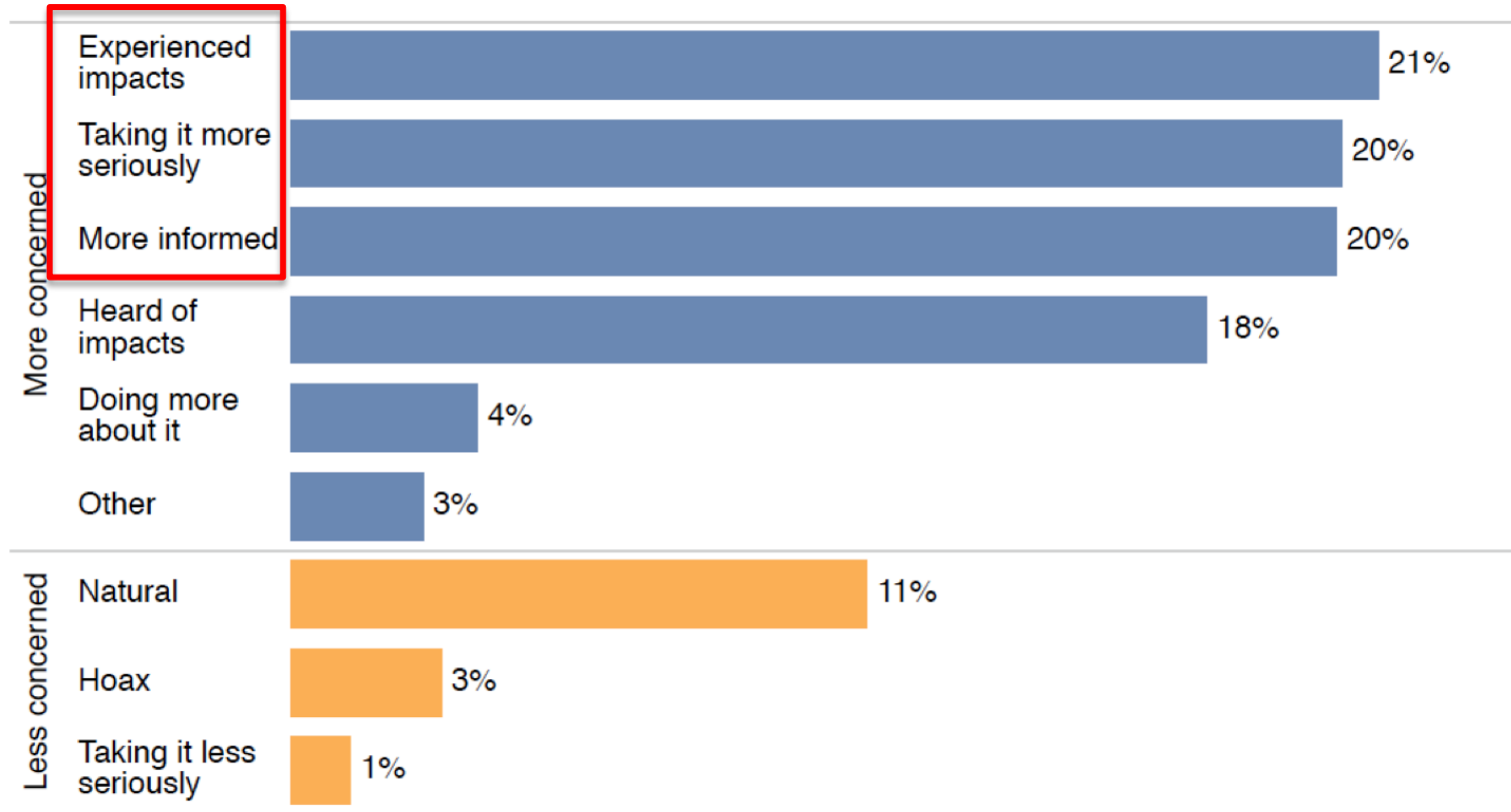
Engaging your audience: facts matter

Figure 1: Proportion of the U.S. adult population in the Six Americas
Proportion represented by area



Engaging your audience: facts matter

Why have you changed your mind about global warming?
(*n*=184)



Deeg et al. 2019

A Quick Guide to Program Elements

Compiled from a variety of sources by Dan Irelan, Denali National Park & Preserve

Opportunities for Intellectual connections

Which connection opportunities seem to bring about:

awareness	insight	understanding of
cause and effect	mindfulness	concepts
comprehension	perceptiveness	unearthing
discernment	reasoning	unfolding
discovery	recognition	wisdom...
enlightenment	revelation	

Multiple Intelligences...

...and some techniques that help address them

Verbal

Stories, quotations, description, explanations, compare and contrast, listing, voice variation, silence, examples, songs, journaling/poetry writing

Visual/spatial

Illustrations, props, body language, gestures, "I Spy" game, demonstrations, guidebooks, art/sketch activity

Interpersonal/social

Role playing, participation, questioning, problem solving, team activities, drama, activities, scavenger hunts, field guides/cards, discussion questions/pair share, debates, role playing, asking for volunteers/assigning tasks

Intrapersonal/reflective

Guided visualization, stories, rhetorical questioning, journaling, sketching, moments of silence

Naturalist

Games, role playing, sensory involvement, contrast natural/unnatural features, certain props, ID'ing with field guides, explanation connecting human & natural elements

Mathematical/logical

Statistics, comparisons, analogies, presentation of evidence, listing, charts/graphs

Musical/rhythmic

Music (with or without lyrics), chants, audio clips, listening exercises, silence, mnemonic devices, triphammers (repeated phrases), recorded animal or natural sounds

Kinesthetic/physical

Demonstrations, body props, drama, re-enactments, scavenger hunts, demo/teach an outdoor skill, touch/tactile activity

Techniques that can be Interactive

Role Playing

Recall Question (ask to recall something already discussed)

Application Question ("How do we humans adapt to winter?")

Field Guides and Plant ID Cards

Sharing Circle (each visitor shares an experience or a response)

Gathering (visitors contribute to a group composition)

Scavenger Hunt or Exploration

Rapport • Quiz • Props • Song

Call & Response • Demonstration • Icebreaker

Opportunities for Emotional connections

Which connection opportunities seem to provoke or inspire:

admiration	contentedness	fright	respect
aggravation	contrition	frustration	reverence
amazement	curiosity	gladness	sadness
anger	delight	gratitude	satisfaction
anguish	despair	grief	sentiment
apprehension	devotion	happiness	shame
astonishment	disappointment	horror	sorrow
aversion	disgust	joy	surprise
awe	dismay	loyalty	sympathy
bewilderment	distress	nostalgia	tranquility
bliss	dread	passion	veneration
comfort	elation	pity	vexation
commiseration	empathy	pride	wonder
compassion	esteem	regret	worry
concern	exasperation	relief	yearning...
consternation	exhilaration	remorse	

Universal Concepts

"understood by almost everyone"

Love	Death
Freedom	Spirit
Higher Power	Justice
Passion	Hate
Adventure	Tragedy
Grace	Joy
Sorrow	Birth
Mystery	Change
Family	Tradition
Violence	Sacrifice
Freedom	Family
Passion	Parenthood
Loss	Aging
Renewal	Fear
Pain	Home
Power	Community
Humor	Beauty
Survival	Nature
Sacrifice	Bravery
Quest	Identity

Ideas for

← Transitions →

- ❖ Bridge one point to the next – make a logical flow between them.
- ❖ You can revisit your overall **theme**, then connect it to the next point.
- ❖ You can use a **technique**, such as a question or activity to recall question – "What did we observe earlier...?" – might make a good start to a transition.)
- ❖ On a **guided hike/conducted activity**:
 - Does your transition provide a chance to **observe or immerse** in surrounding resources?
 - Do you follow up your transition at the beginning of the next stop?
- ❖ If you are having a hard time creating a transition between two points, **revisit your program structure**: are your main points really in a logical order? Is each point relevant to a cohesive program?

ABCD's of Objectives

These can help focus and better define your objectives:

Audience Who is the target for your objective?

"Visitors who take the quiz will..." "3/4 of visitors will..."

Behavior What will the audience do, or be able to do?

"...recite three plant adaptations to cold weather"

Conditions When or where will they do it?

"At the end of the talk..." "During the hike..."

Degree How much will be needed to indicate success?

"will recall at least 3 steps to take in a bear encounter."

Some Possible Audiences for Objectives

(other than "visitors", or a fraction of them)

- First time visitors...
- Families with children...
- Visitors who stay after to talk...
- Visitors who express discomfort/unease at the beginning...
- Visitors who ask questions...
- Visitors who answer questions...
- Visitors who volunteer to...

Engaging your audience: shared humanity



Odd and peculiar?



Engaging your audience: shared humanity

