

Presenting EarthScope to the Public in Parks and Museums:

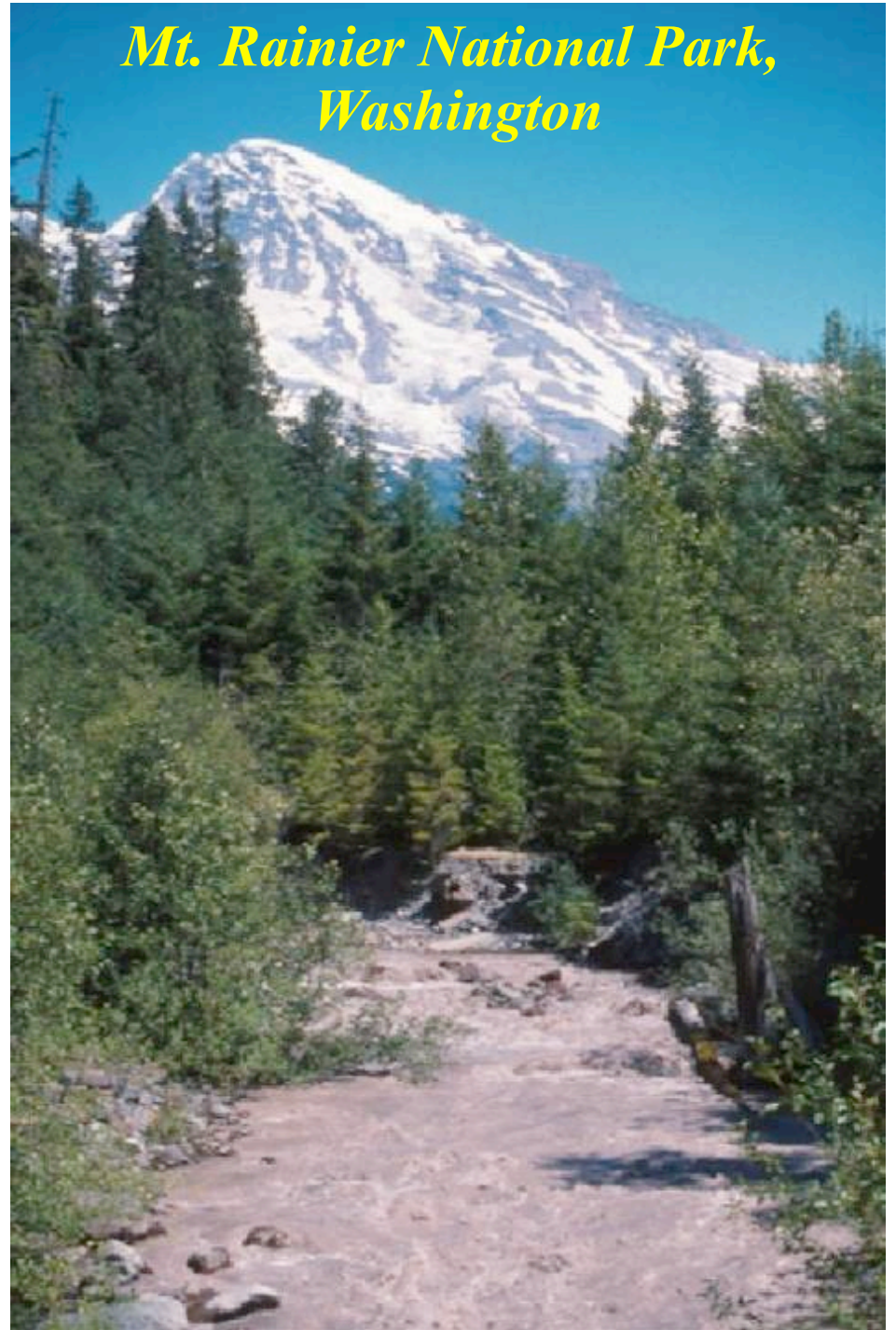
Interpretive Strategies for Cascadia Subduction Zone

Bob Lillie

EarthScope Education/Outreach Manager
EarthScope National Office
Oregon State University

EarthScope Cascadia Interpretive Workshop
Mt. Rainier National Park Education Center
Tahoma Woods, Washington
April 7-10, 2008

*Mt. Rainier National Park,
Washington*



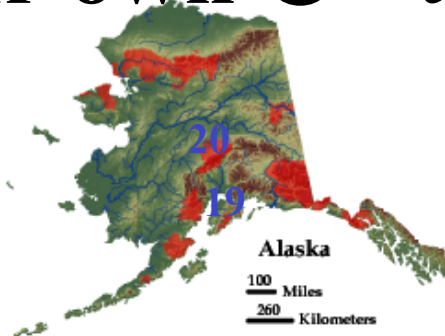
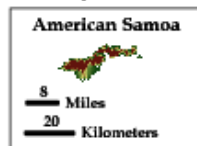
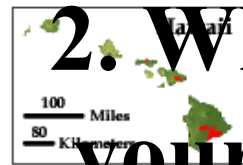
Robert J. Lillie

NATIONAL PARKLANDS

Introductions (About 5 at a time ☺)

1. Who? Where from? Why this workshop?

2. What's your favorite park - other than your own ☺ - and why?



Geology for Normal People

Normal Person:

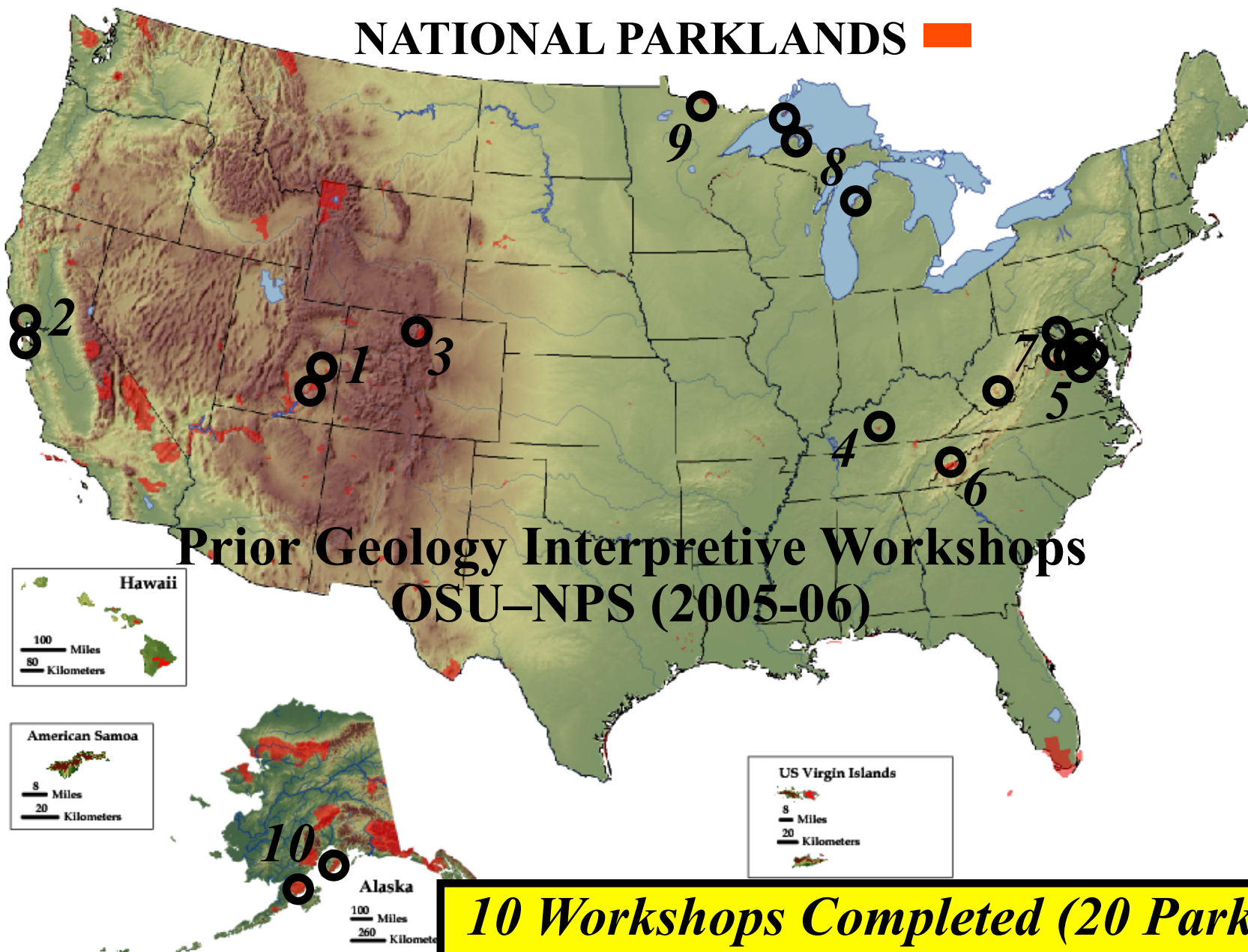
“Anyone who is not a geologist.”

Kenai Fjords National Park, Alaska

Why National Parks?

- National parks have incredible geology just begging to be explained to the public.
- Park interpretation ranger backgrounds:
 - Commonly life sciences.
 - Geology degrees rare.
- Very little earth science is covered in K-12 school system.
 - Typically one course in 7th or 8th grade.
- Parks are one of the few places kids might go with their families, where:
 - Geology is right there.
 - There might be someone to explain it to them.

NATIONAL PARKLANDS 



**Prior Geology Interpretive Workshops
OSU-NPS (2005-06)**

10 Workshops Completed (20 Parks)

Comments Overheard:

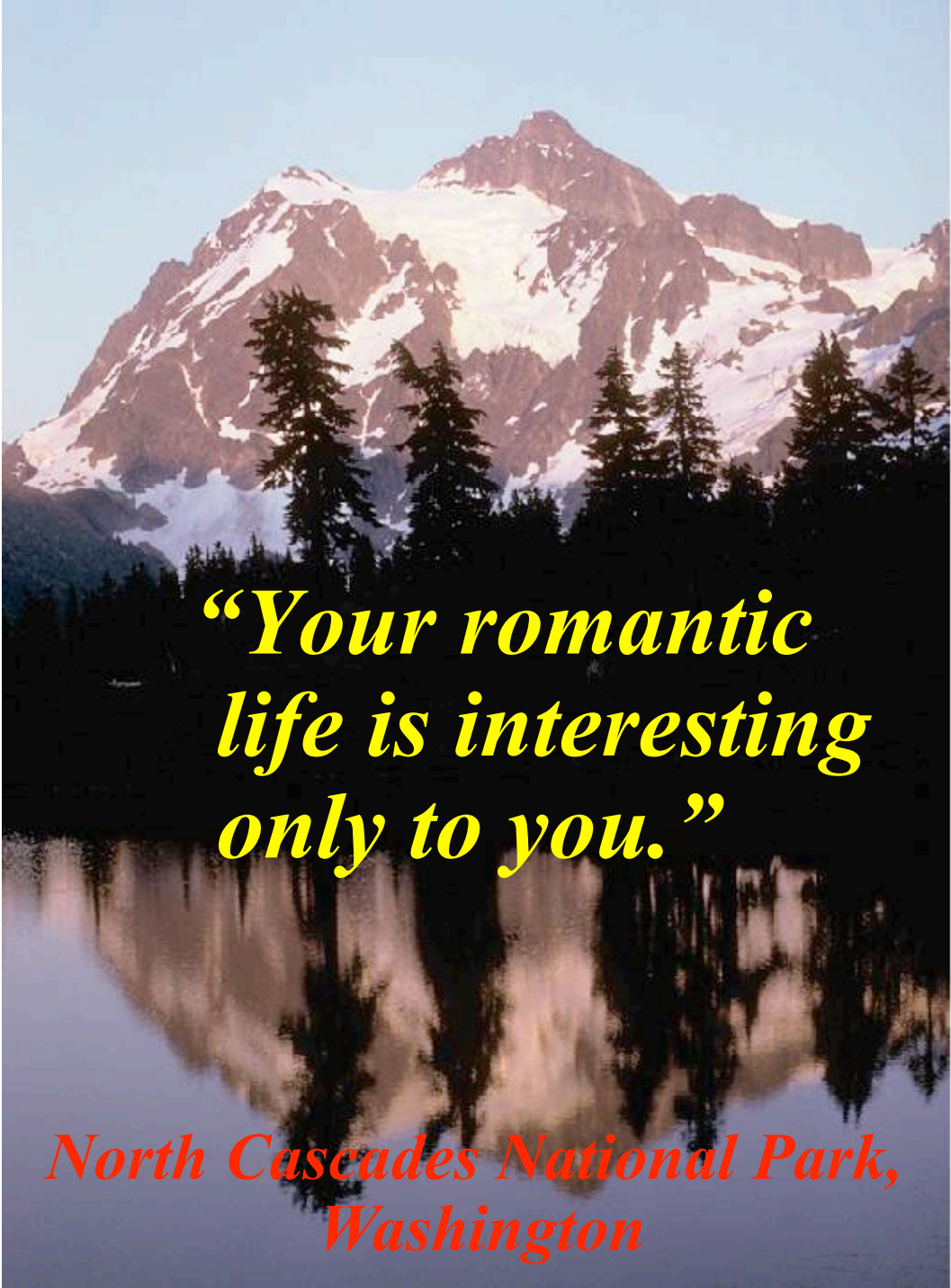
- From park staff:
 - “Gee, it’s wonderful you’re here. We had a geologist here a couple years ago. A nice guy who really knew his stuff. Unfortunately, we didn’t understand a word he said.”
- From a geologist:
 - “Yea, I went to a ranger talk. But the ranger knew nothing about geology. Didn’t even know the difference between a granite and a granodiorite.”

Robert J. Lillie



*Yosemite National Park,
California*

Fortune Cookie:



*“Your romantic
life is interesting
only to you.”*

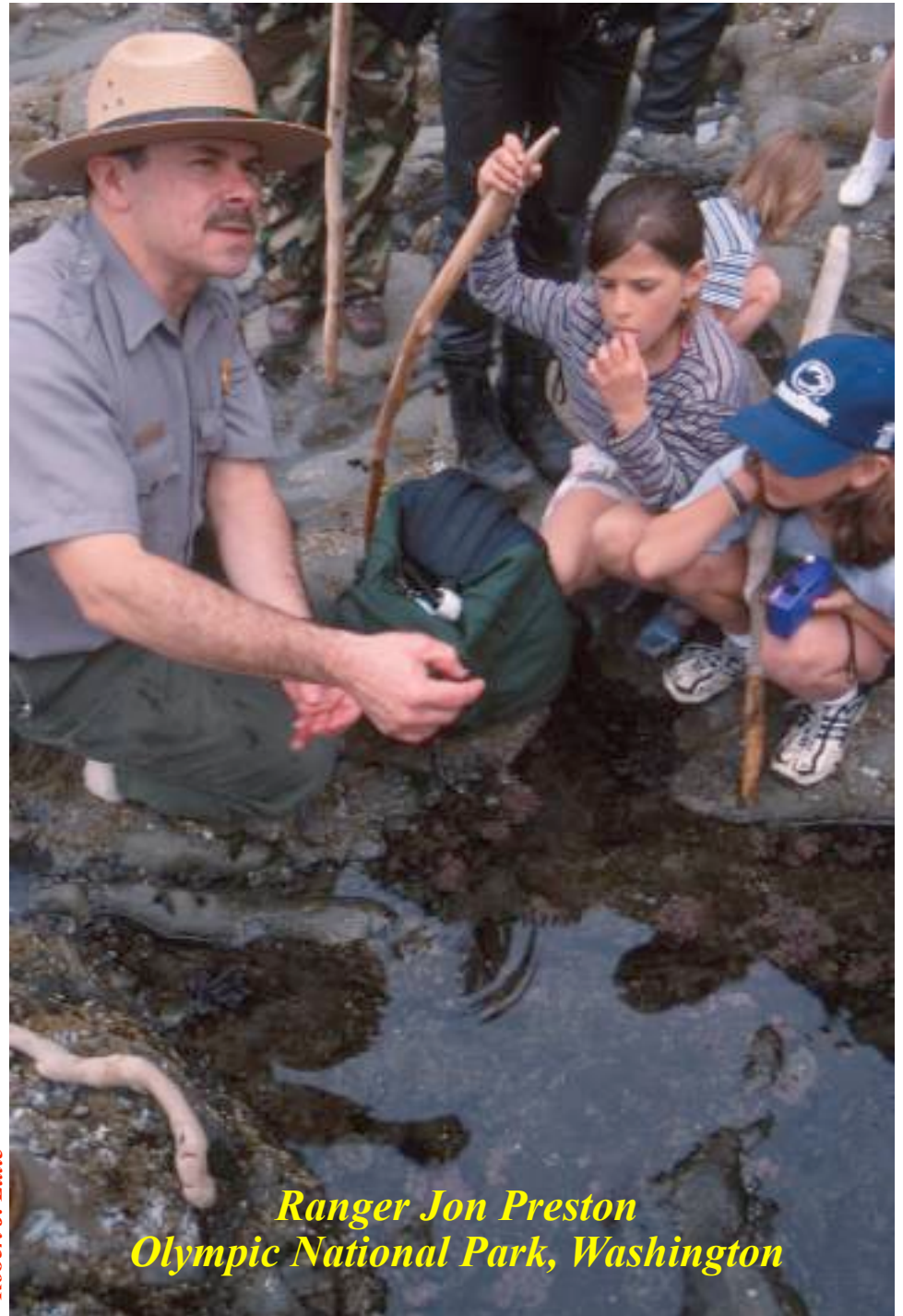
Robert D. Lawrence

*North Cascades National Park,
Washington*

EFFECTIVE RANGER TALK

- Personal experience of interpreter
- Good factual content
- Level appropriate for audience
- Relates factual content to people's lives

Robert J. Lillie



*Ranger Jon Preston
Olympic National Park, Washington*

Golden Gate National Recreation Area, California

Interpretation:

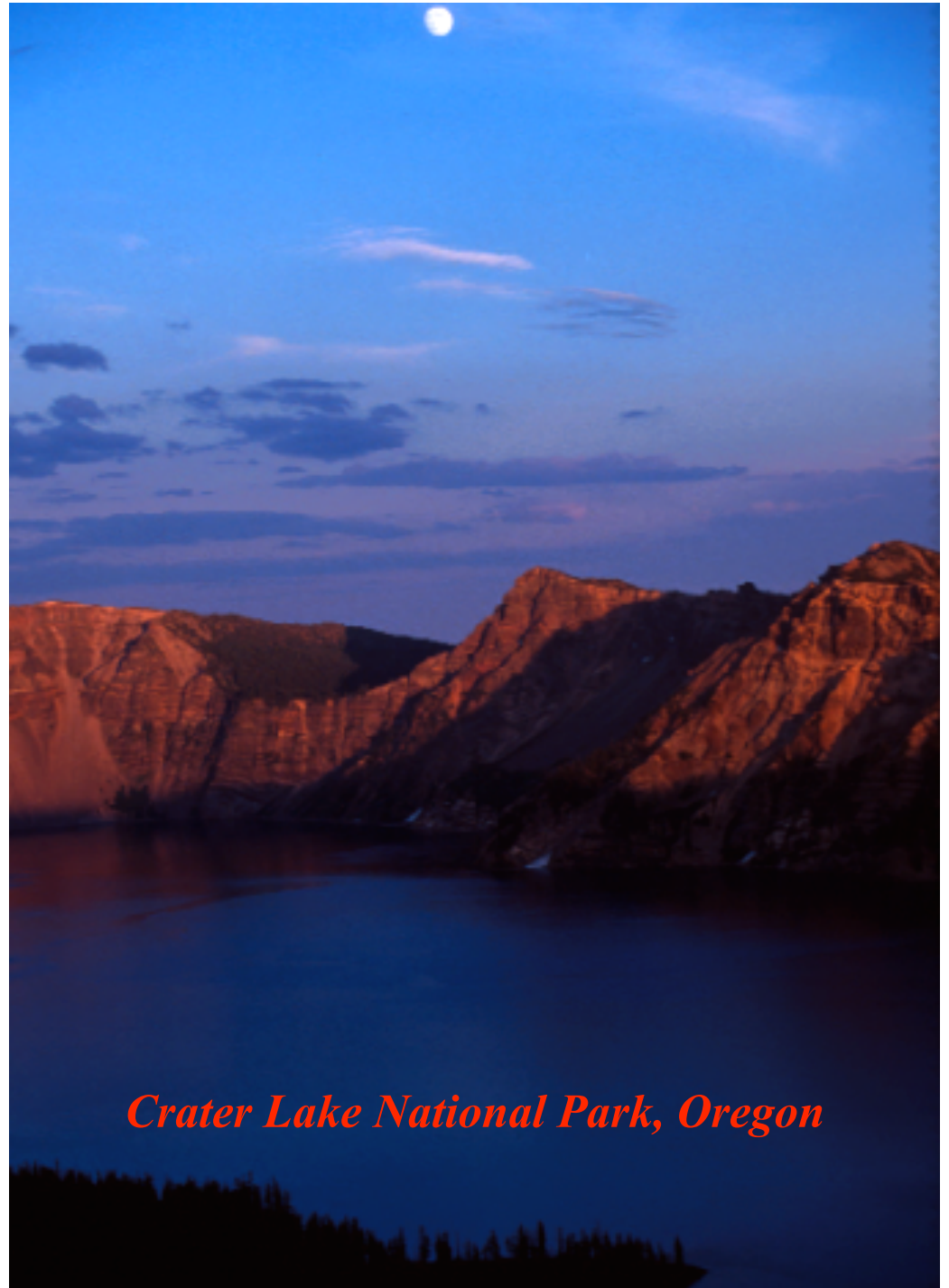
Creates opportunities for an audience to form their own intellectual and emotional connections to the meanings of a resource.

During field trip, Red Cross ship sails beneath Golden Gate Bridge headed for New Orleans.

Primary Interpretive Themes

- Ideas about park resources that the park would like visitors to comprehend so that they might better understand, enjoy, and care for the park.
- Based on the park's legislation, mission, purpose, significance, and primary resources.
- Help park staff provide opportunities for visitors to form intellectual and emotional connections to park resources.

Robert J. Lillie



Crater Lake National Park, Oregon

Mount Rainier National Park

Primary Interpretive Themes:

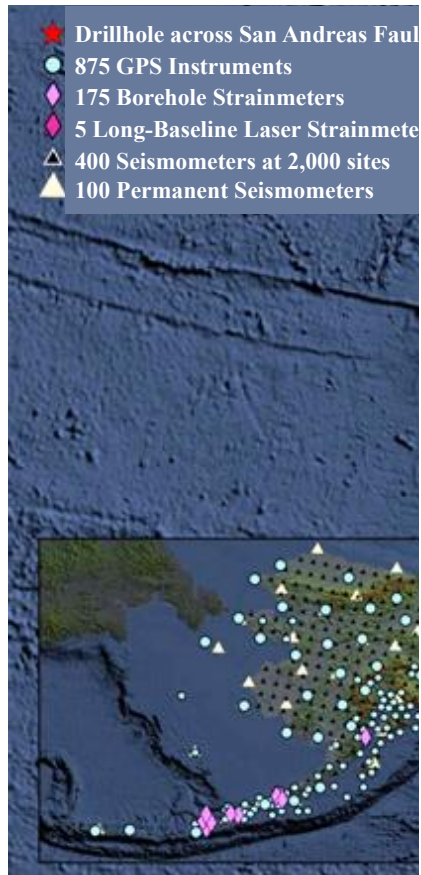
Geology

- Mt. Rainier is an active volcano that shapes the landscape and influences processes both within and beyond the park boundary.
 - Subtheme: Mt. Rainier is a product of past and continuing volcanic forces, both creative and destructive. The mountain's constructive and destructive forces pose significant hazards to human and natural communities around the park.



Robert J. Lillie

Workshops for Interpretive Professionals in Parks and Museums



NPS – EarthScope **Primary Interpretive Themes**

- **The EarthScope experiment – the most comprehensive exploration to date of the structure, dynamics, and geologic history of the North American continent – exemplifies the insatiable human drive to learn.**
- **EarthScope encourages a feeling of national interconnectedness – a continental sense of place – by openly inviting communities to actively participate in the experiment, and by fostering an understanding that their local environment and culture interact with other components within the larger, dynamic Earth system.**

Alaska

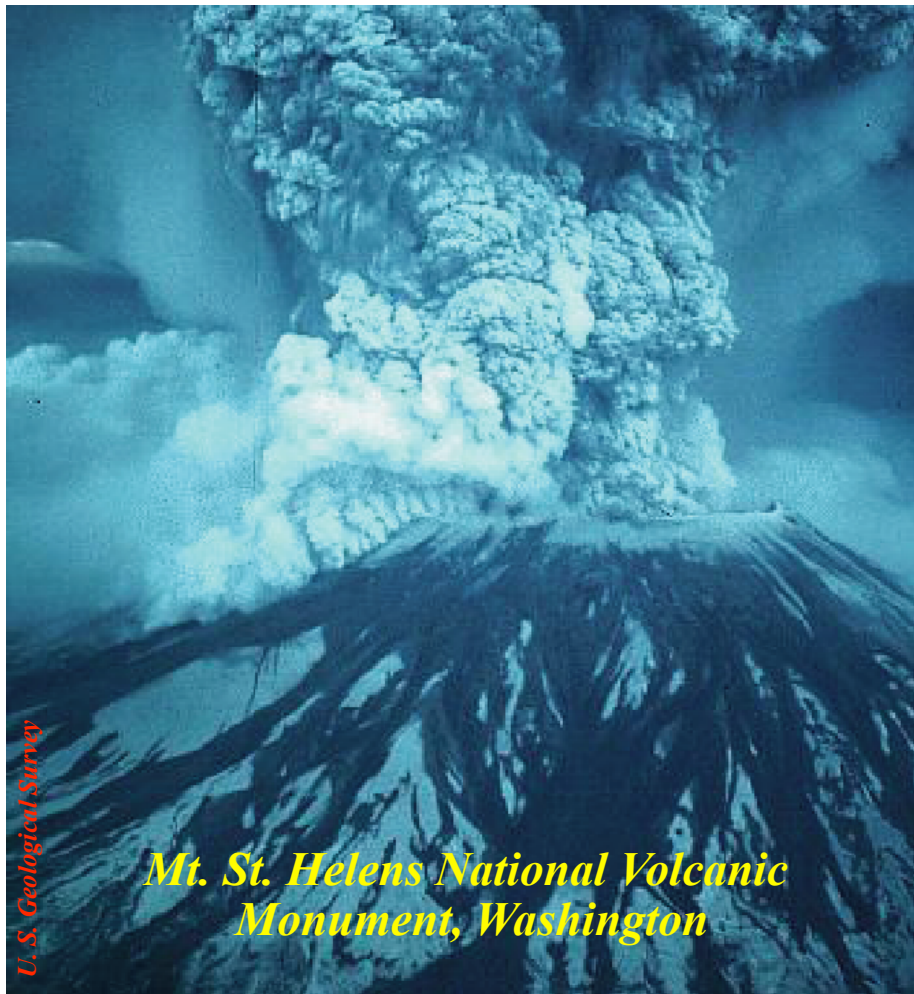
100 Miles
250 Kilometers

NATIONAL PARKLANDS



A potential Cascadia EarthScope Theme might revolve
around the idea of “Beauty and the Beast”

*“The same earthquake and volcanic activity that threatens our lives
also nourishes our spirits by creating the tranquil mountains and
coastlines of the Pacific Northwest.”*



Engaging the Public on the Geology of National Parks and other Special Places

1. Geology on a Basic Level

2. Results of Latest Research

- Paleoclimate:

- Example of how outreach efforts are now paying off in terms of public awareness/action

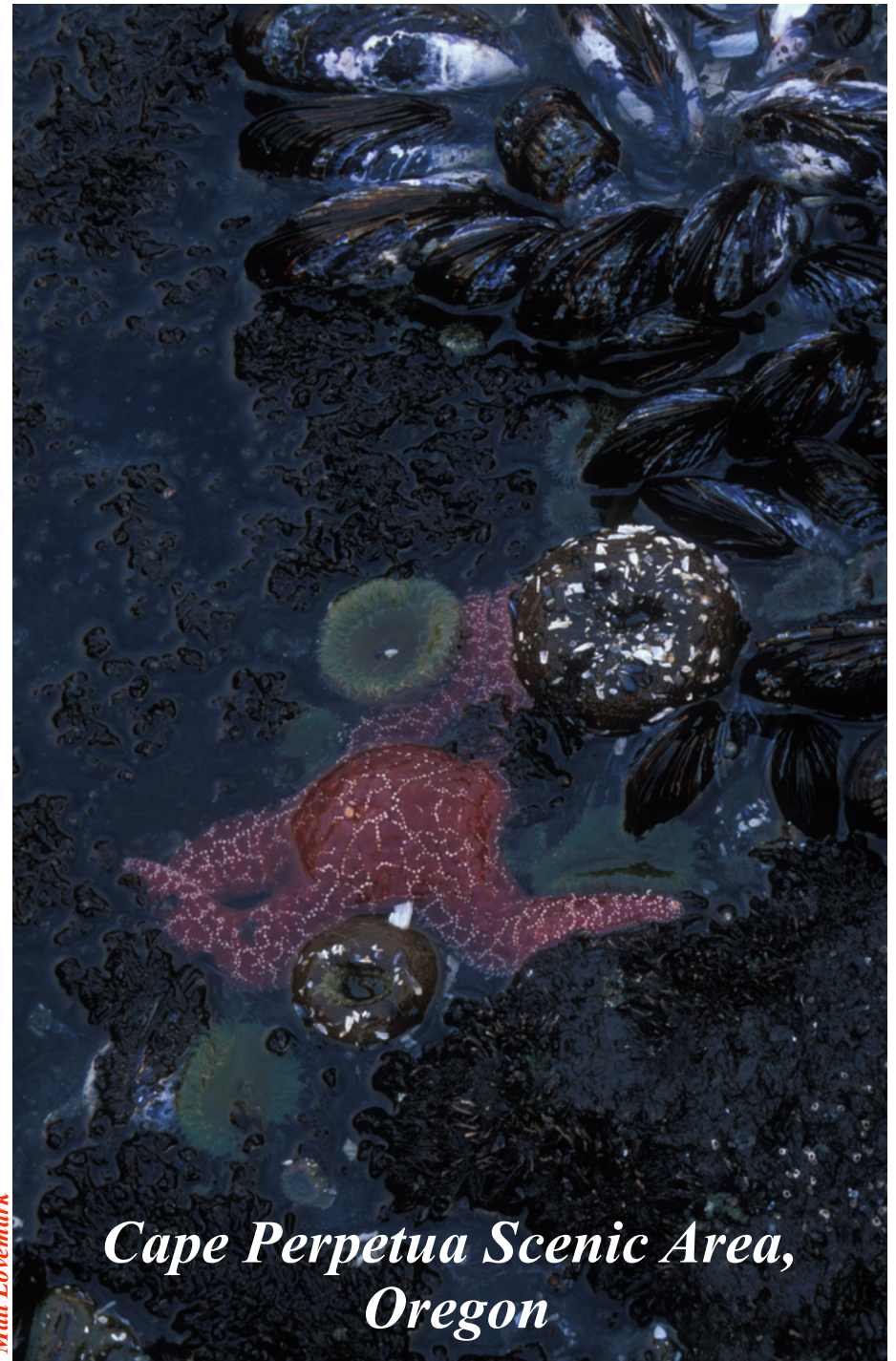
- Volcanic Activity

- Earthquakes

- Landscape Development

→ EarthScope!!!! 😊

Matt Lovemark



*Cape Perpetua Scenic Area,
Oregon*

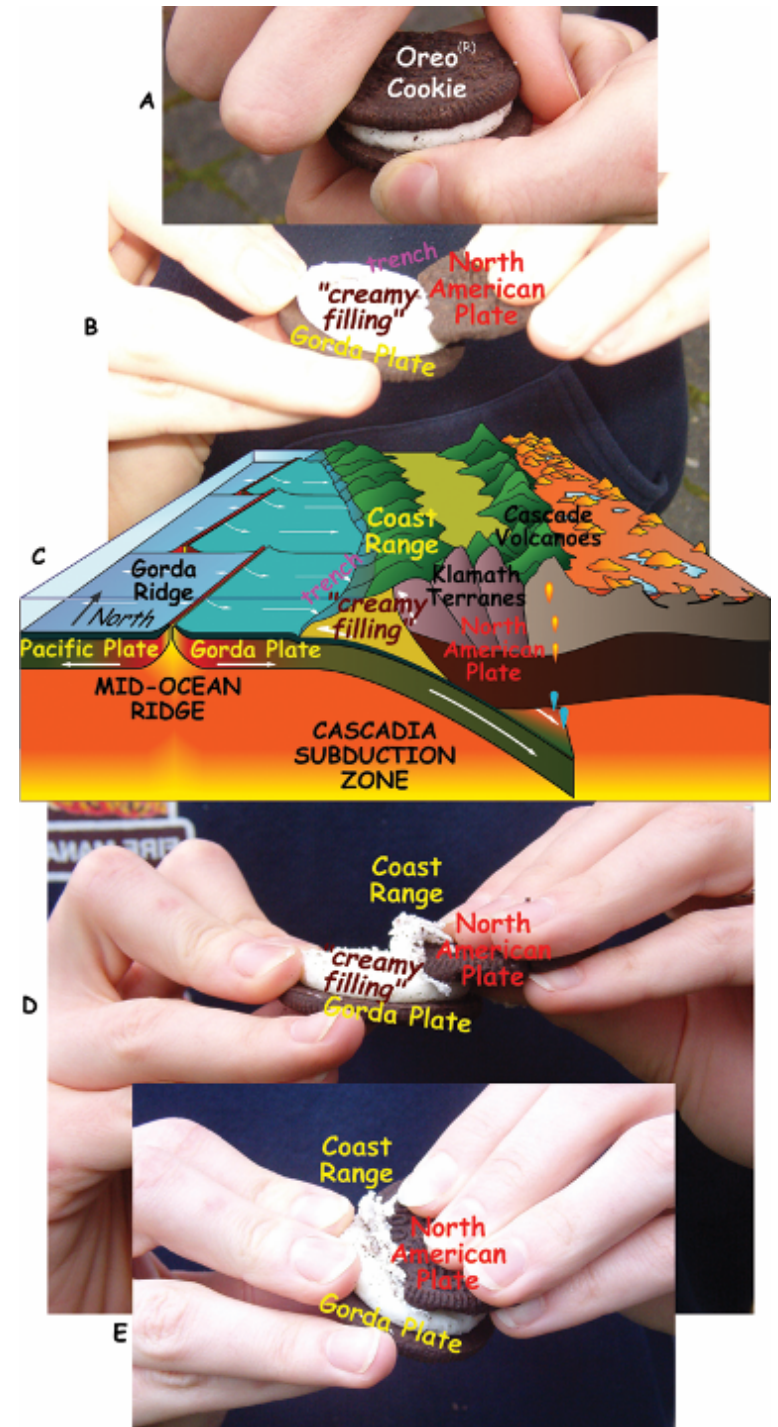
Interpretive Programs involving EarthScope might include:

1. Results of Latest Research

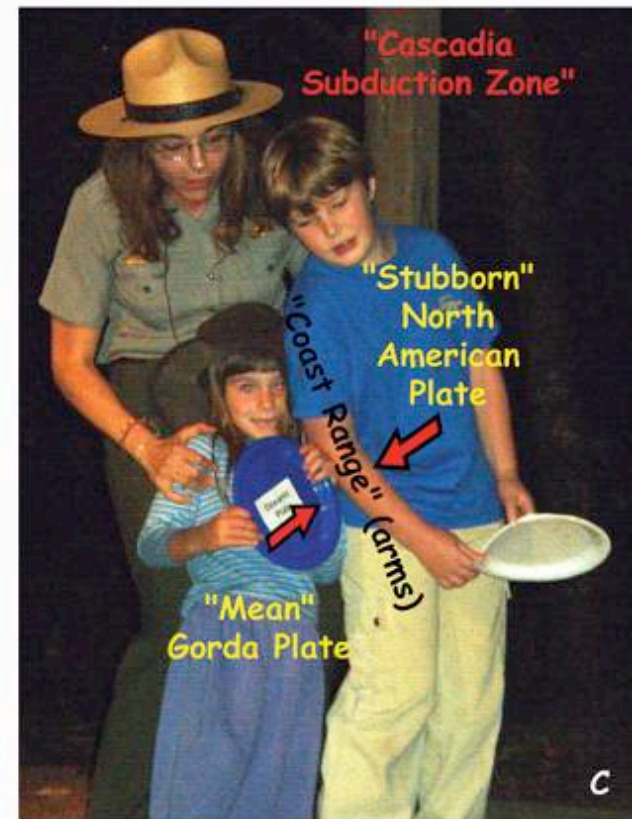
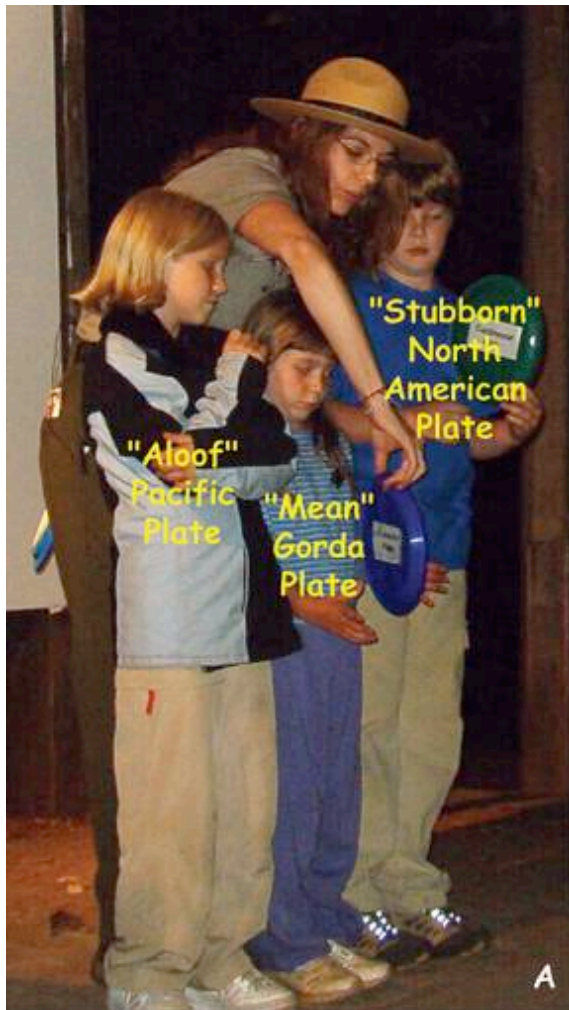
- Real-time aspects of EarthScope data as a means to greater awareness of:

2. Geology on a Basic Level

- Earth Dynamics
- Earthquake, Volcanic and other Natural Hazards
- Awareness of 4D Earth



Jen Natolli
OSU Geosciences Graduate Student
Park Ranger, Redwood National and State Parks, California



Direction of
Wave Travel



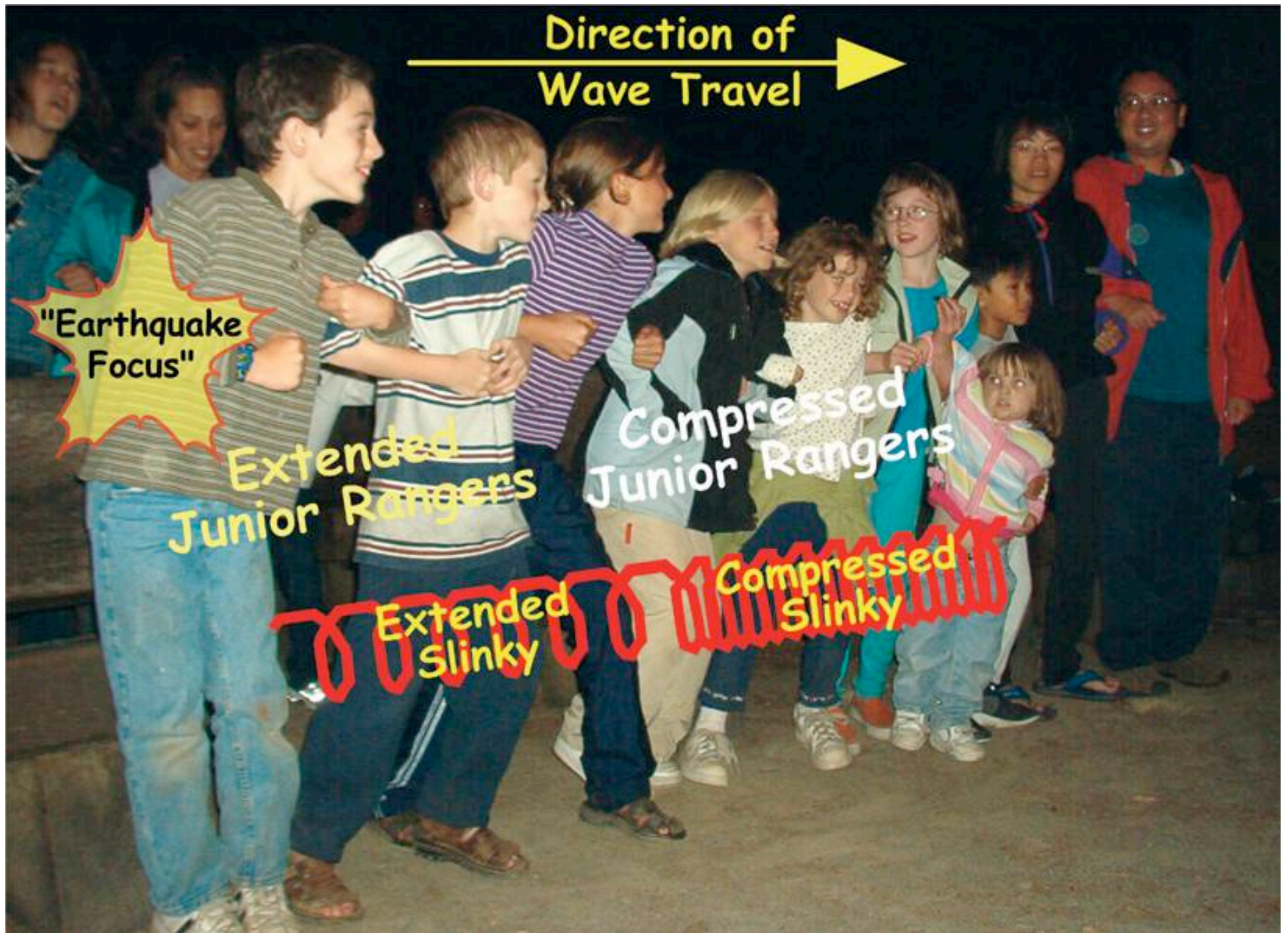
"Earthquake
Focus"

Extended
Junior Rangers

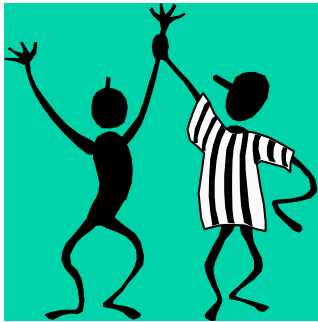
Compressed
Junior Rangers

Extended
Slinky

Compressed
Slinky



PAIRing People with Parks



Park
Visitors

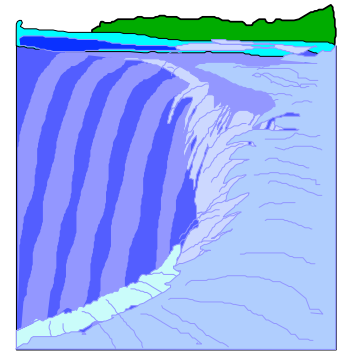
PAIR

*Presentation
Technique*

*Audience
Characteristics*

*Interpretation
Methods*

*Resource
Information*



Park

(Adopted from Allyson Mathis, Grand Canyon National Park)

PAIRing People with Parks



Park
Visitors

P

Presentation
Technique

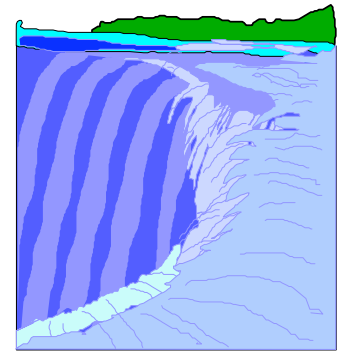
I R

Interpretation
Methods

A

Audience
Characteristics

Resource
Information



Park

*Won't work if any
link is missing!*

(Adopted from Allyson Mathis, Grand Canyon National Park)

NPS Interpretive Equation:

$$(KR+KA)AT = IO$$

Opportunities
for Intellectual
and Emotional
Connections



Park
Visitors

KR = Knowledge
of the Resource

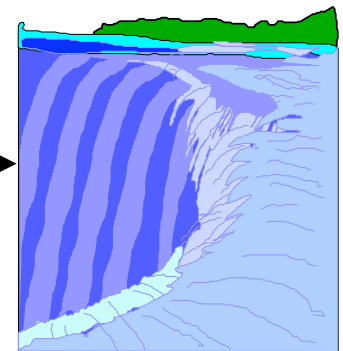
KA = Knowledge
of the Audience

Presentation
Technique

Audience
Characteristics

Interpretation
Methods

Resource
Information



Park

AT = Appropriate
Technique

IO = Interpretive
Opportunity

(Adopted from Allyson Mathis, Grand Canyon National Park)

North Cascades National Park: Geology Interpretive Topics (Resource Information that can be incorporated into themes)

It's all about Telling a Story:

1. HARD ROCKS:

- Tell the ongoing history of building the North American continent.

2. GLACIERS:

- Speak to global climate change.

3. LANDSCAPE:

Shows how geological materials and processes affect biology, ecology, and human history.

4. EarthScope Monitoring:

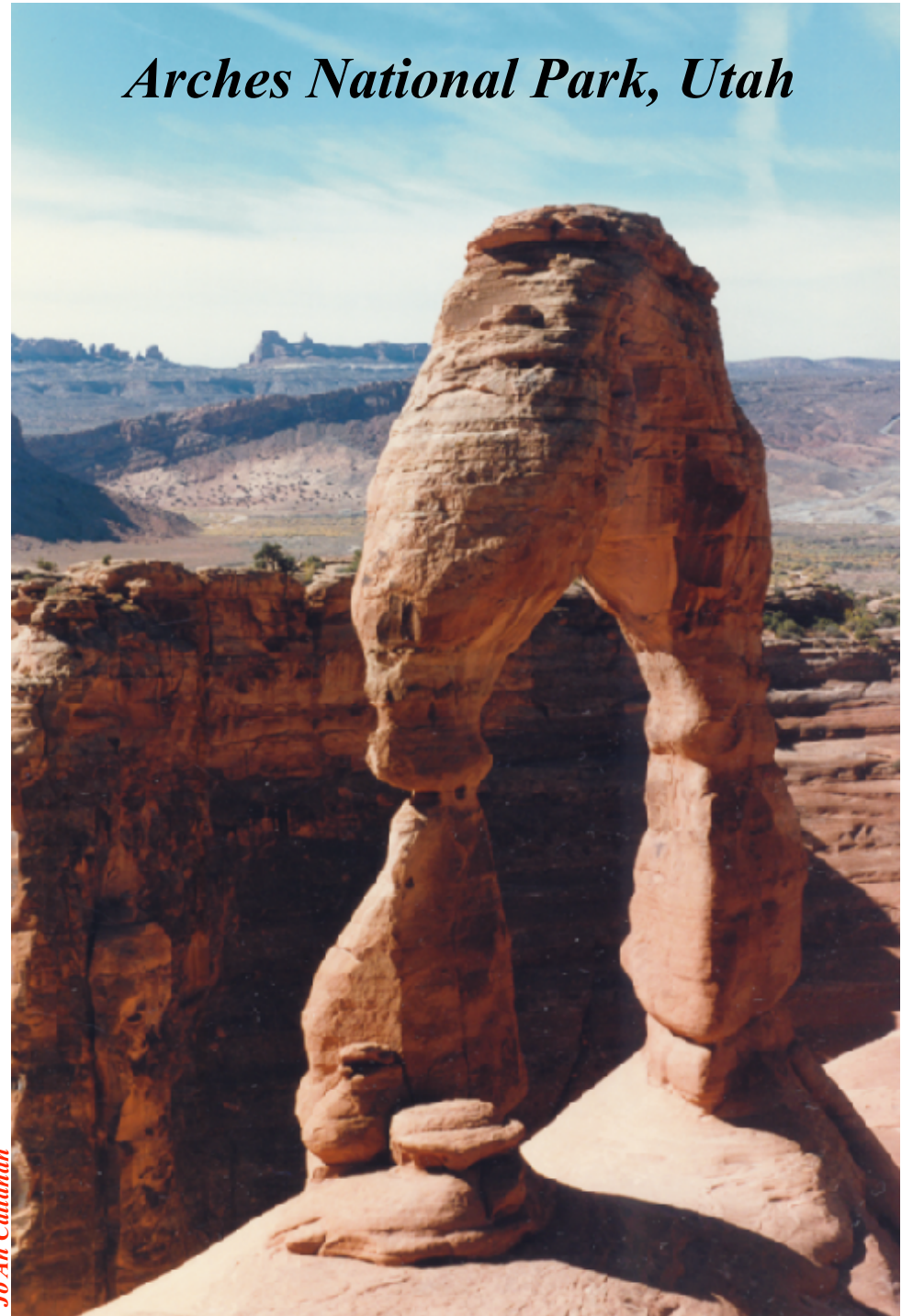
- Relates all of above by highlighting a dynamic Earth.

North Cascades National Park, Washington

TANGIBLES vs. INTANGIBLES

- Tangibles
 - Information
- Intangibles
 - Meaning

Arches National Park, Utah



WHAT DOES THIS MEAN IN TERMS OF GEOLOGY?

- Information (Observations)

- Types of Rocks
- Landscapes
- Earthquakes or Volcanic Eruptions
- EarthScope monitoring of Earth motions

- Meaning (Interpretation)

- Earth processes responsible for the observed features
- How the features and processes affect people's lives
 - Aesthetically
 - Practically

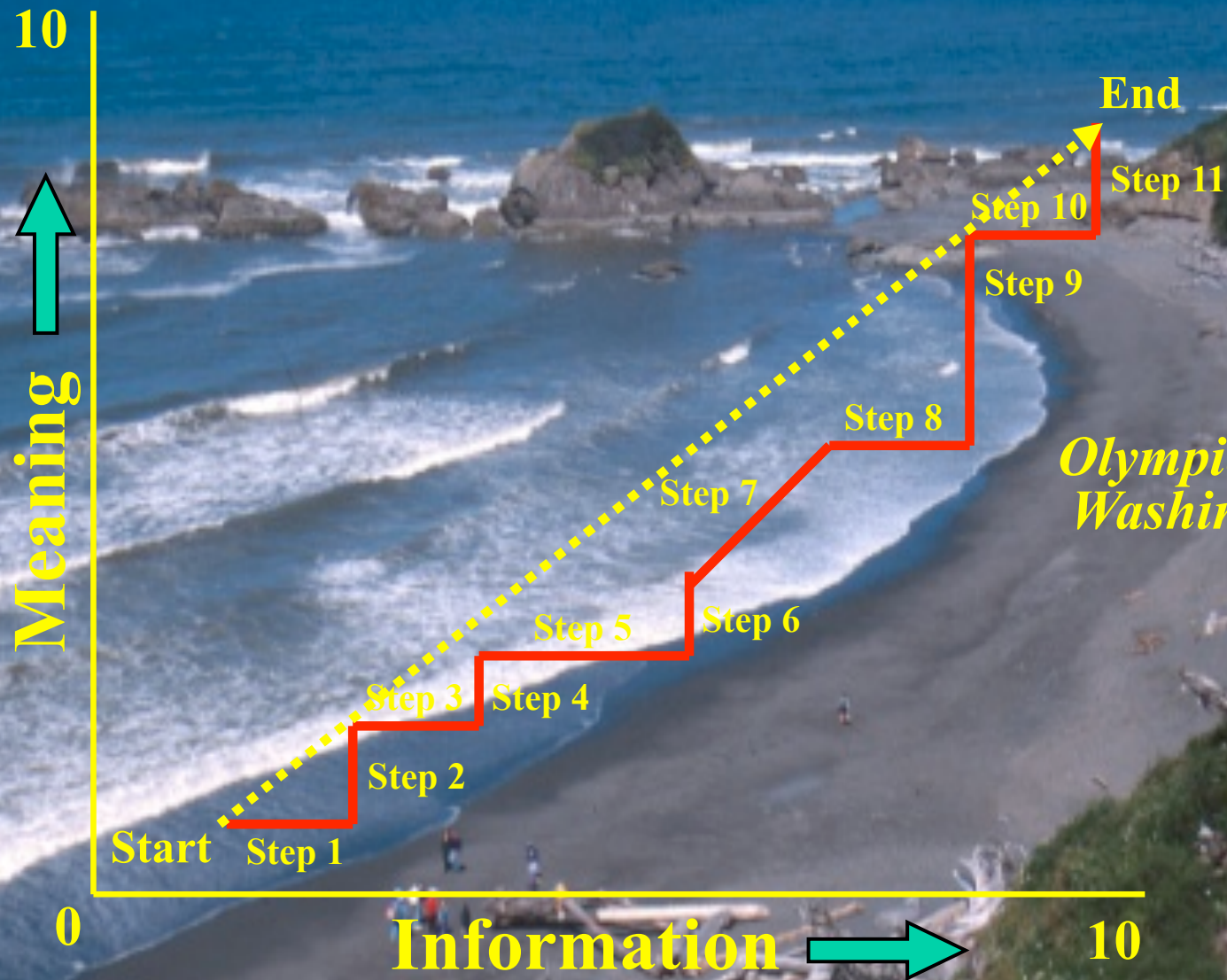
Cape Perpetua Scenic Area, Oregon

What Tangibles and Intangibles can we incorporate into an interpretive program with an emphasis on EarthScope at Olympic National Park?

*Olympic NP,
Washington*



Progression of Interpretive Program



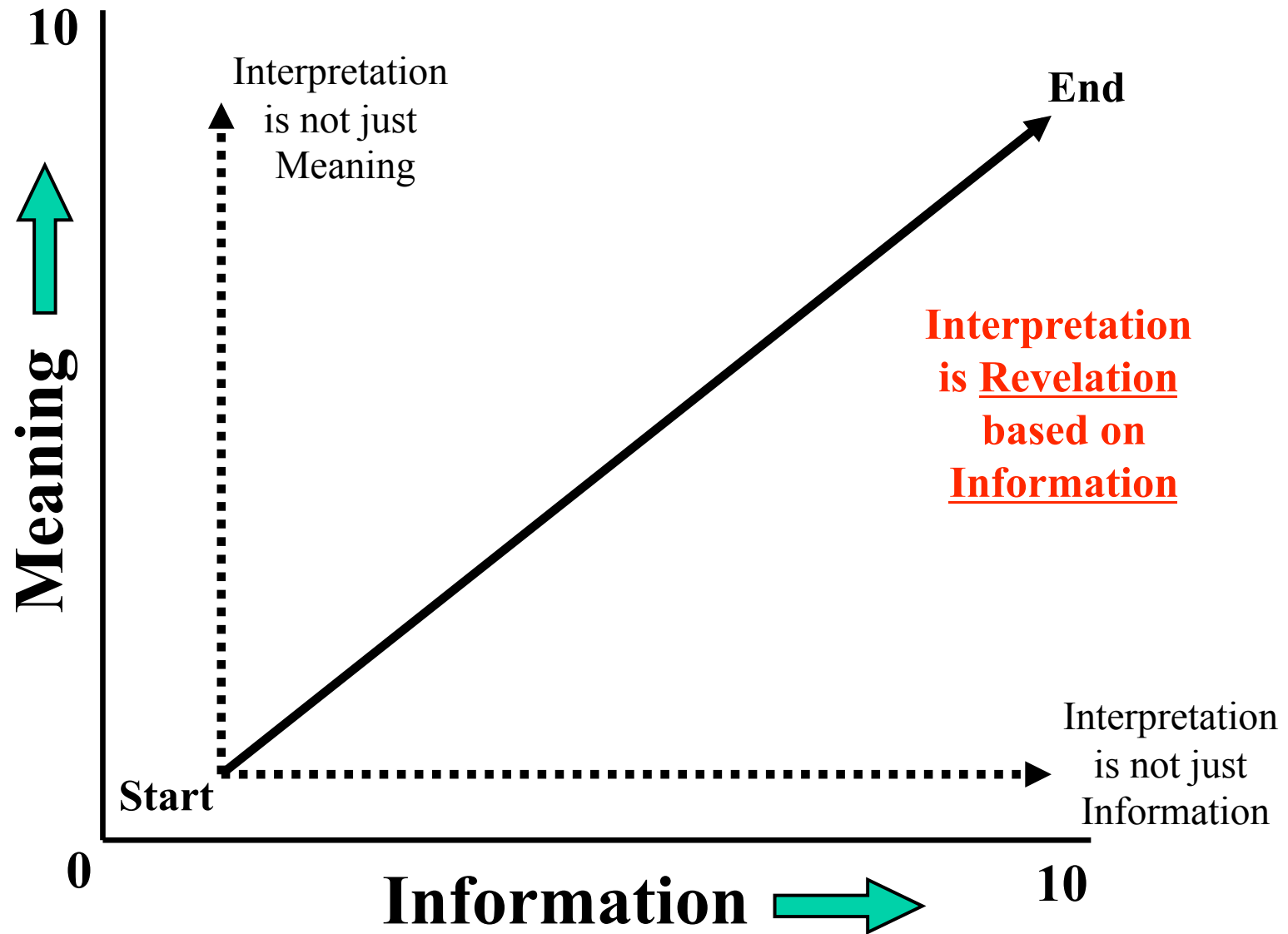
**The Goal of an
Interpretive
Program is to
provide
increased
Information and
Meaning**

D. A. Swanson, U. S. Geological Survey

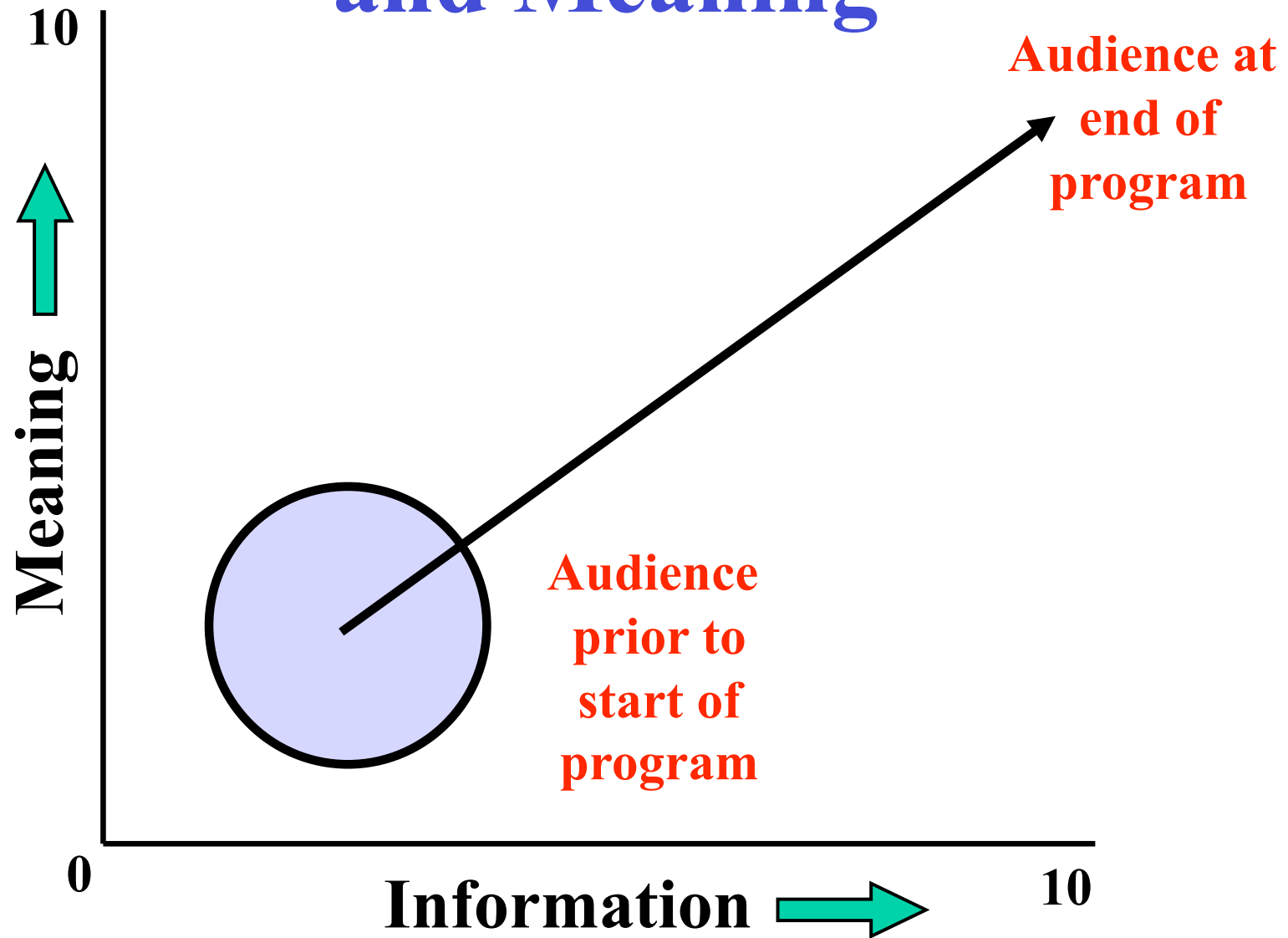


*Hawai'i Volcanoes National
Park, Hawai'i*

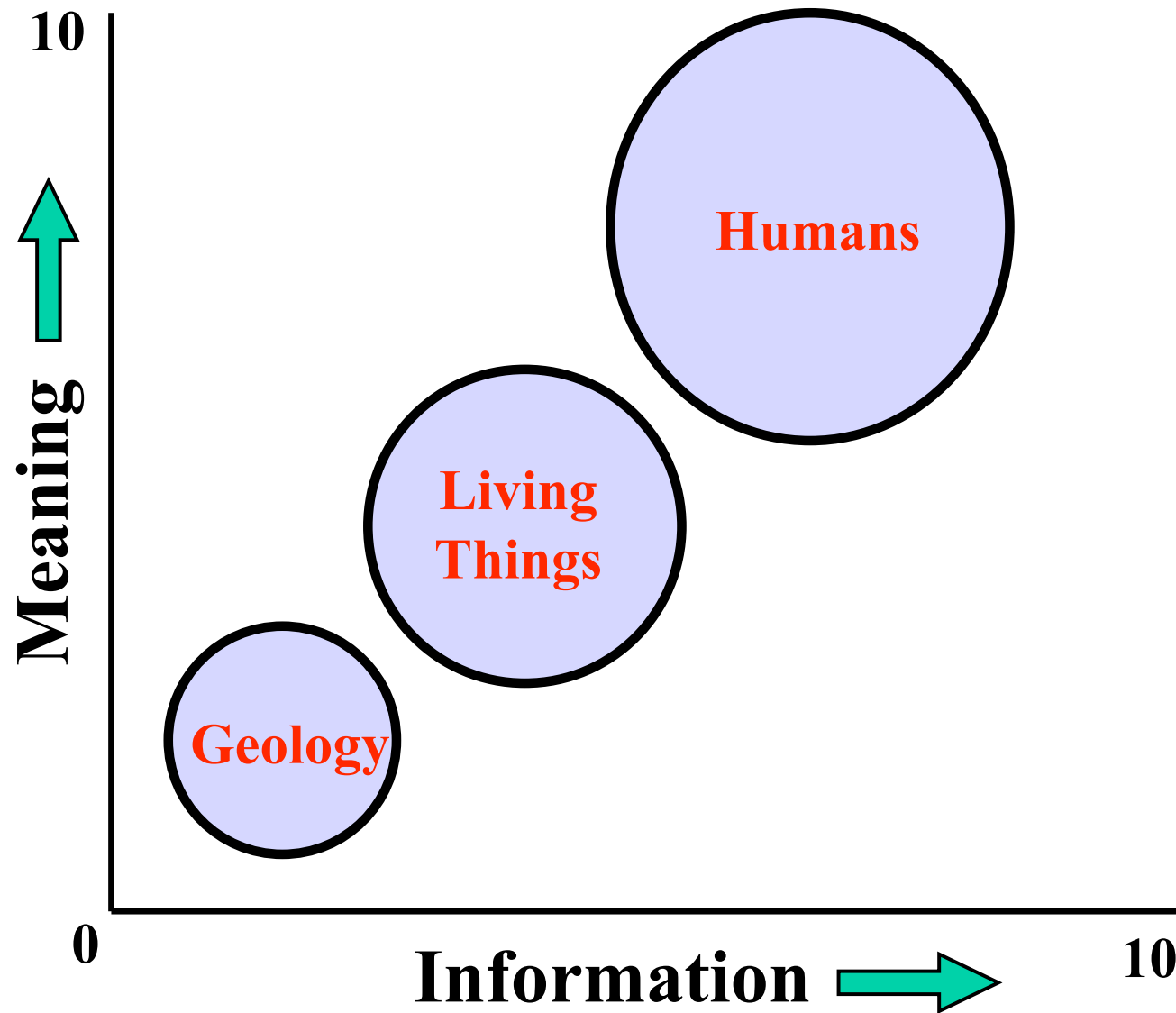
Revelation based on Information



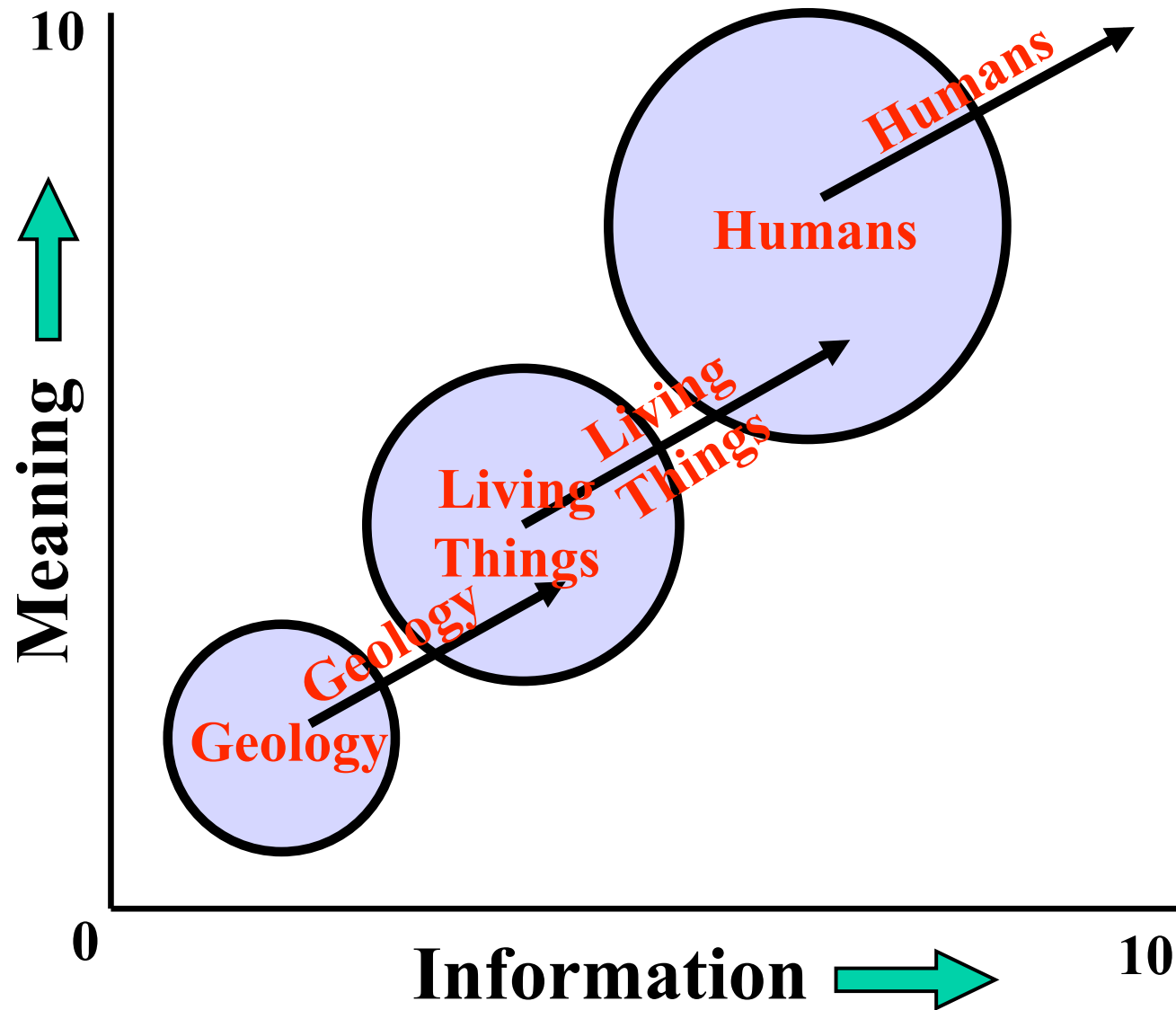
Goal is to increase Information and Meaning



Level of General Audience at Start of Program (Humans? Living Things? Geology?)



Net Change is Key



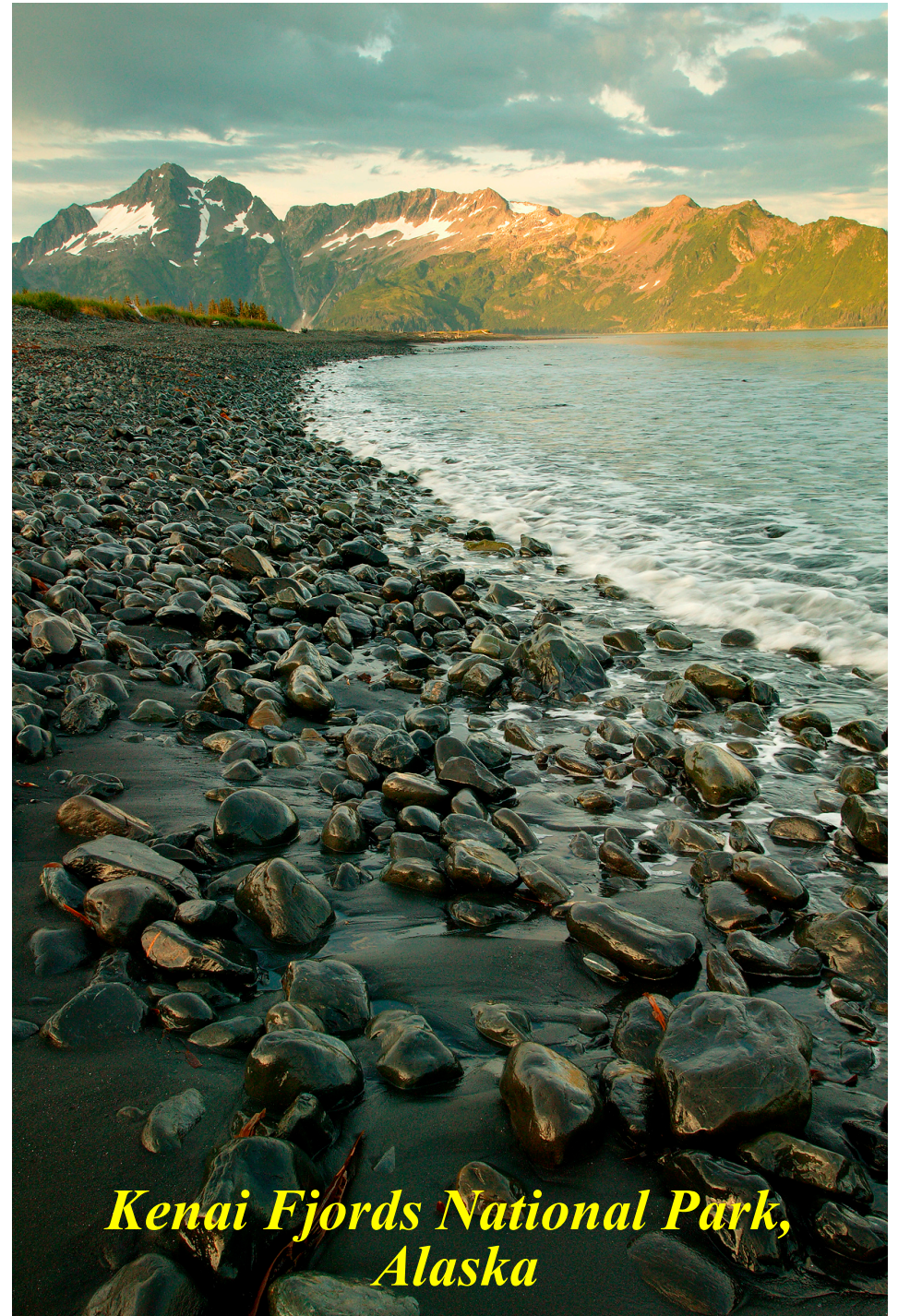
A scenic photograph of a rocky beach in Kenai Fjords National Park, Alaska. In the foreground, a person wearing a red jacket and dark pants is sitting on a large log, looking out towards the water. The beach is covered in grey rocks and pebbles. The water is a deep blue, and the background features steep, green mountains with patches of snow. The sky is clear and blue.

How can we incorporate EarthScope into interpretive programs spanning a variety of resources at parks in the Pacific Northwest?

Kenai Fjords National Park, Alaska

Theme

1. Complete sentence
2. Connects tangibles and intangibles
3. Answers “so what”
4. A message, an idea
5. Specific/interesting (enjoyable)



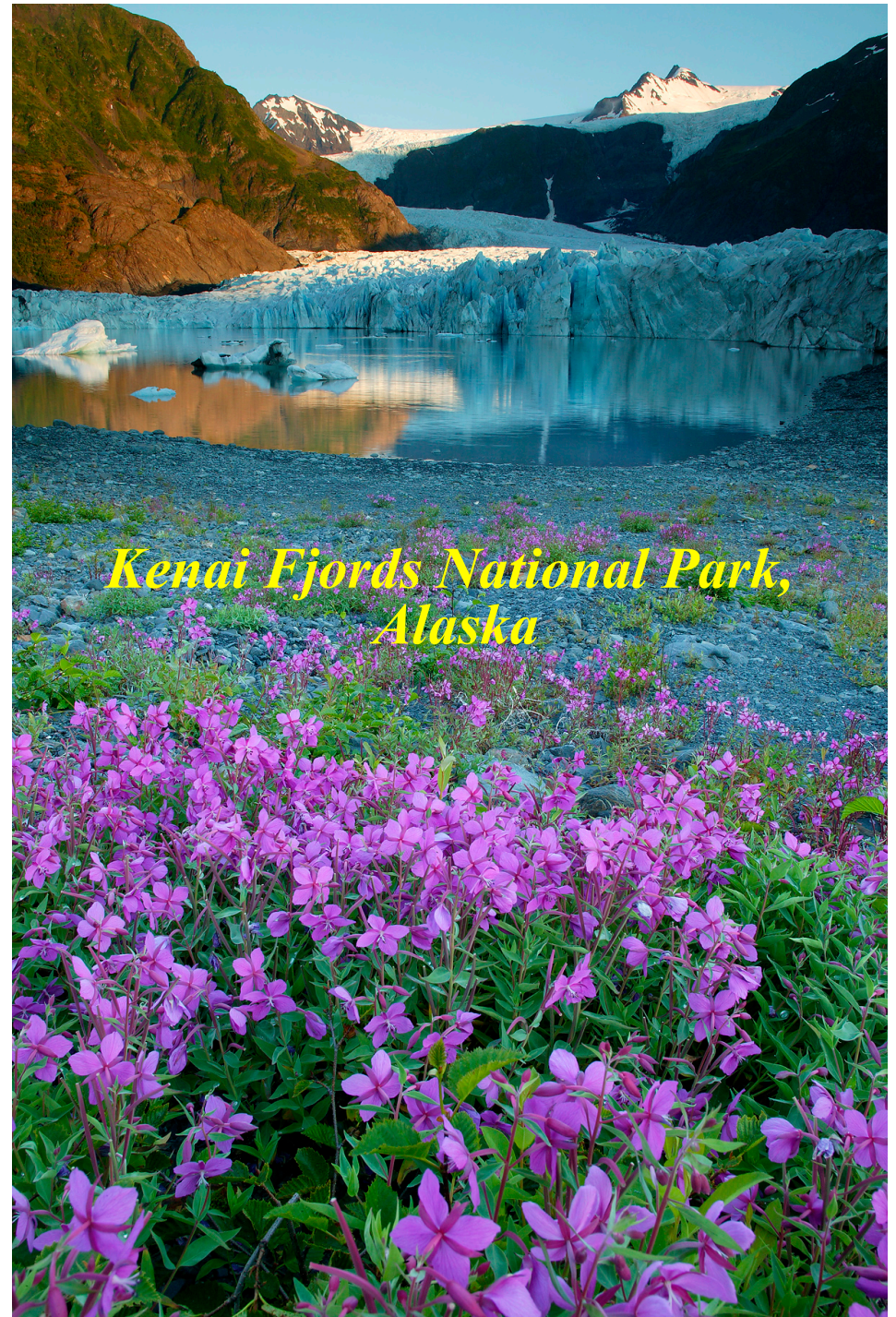
EarthScope Interpretive Program:

Theme Statement:

- . The same earthquake and volcanic activity that threatens our lives also nourishes our spirits by creating the tranquil mountains and coastlines of the Pacific Northwest.

Sub-Themes:

1. (Relate to plate tectonics?)
2. (Relate to geologic hazards?)
3. (Relate to biological / ecological connections?)
4. (Relate to human connections?)



Group Presentations

Groups of 4-6:

Skit?

Interpreter/Audience?

Theme Statement:

Complete Sentence.

Answers “So what?”

Elements of PAIRing:

1. Presentation Technique
Where? What?
2. Who is the Audience?
3. 10-15 Minute Interpretative Presentation
4. Resource Information
incorporates EarthScope

National Park Service



*Kenai Fjords National Park,
Alaska*

Mt. Rainier National Park, Washington

Tomorrow Morning:

- **Meet here (Mt. Rainier Ed. Center)**
- **7:45 Breakfast here.**
- **8:15 Leave for Field Trip (Magical School Bus ☺).**
 - **Drive into park to Longmire.**
- **12:00 Return here.**
- **Working lunch with presentation groups.**

National Parks are Special Places

We can use the sense of place instilled by the landscapes of national parks, monuments, and seashores to engage the public on geological features and processes.

Denali National Park, Alaska

Mike Green

A Sense of Place – by Allan Gussow

- There is a great deal of talk these days about saving the environment. We must, for the environment sustains our bodies.
- But as humans we also require support for our spirits, and this is what certain kinds of places provide. The catalyst that converts any physical location - any environment if you will - into a place, is the process of experiencing deeply. A place is a piece of the whole environment that has been claimed by feelings.
- Viewed simply as a life-support system, the Earth is an environment. Viewed as a resource that sustains our humanity, the Earth is a collection of places. We never speak, for example, of an environment we have known; it is always places we have known - and recall.
- We are homesick for places, we are reminded of places, it is the sounds and smells and sights of places which haunt us and against which we often measure our present.

Robert J. Lillie

Mt. Rainier National Park, Washington