Presenting EarthScope to the Public in Parks and Museums:

*Interpretive Strategies for Cascadia Subduction Zone*

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EarthScope Cascadia Interpretive Workshop
Mt. Rainier National Park Education Center
Tahoma Woods, Washington
April 7-10, 2008
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.
Prior Geology Interpretive Workshops
OSU–NPS (2005-06)

NATIONAL PARKLANDS

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.”

[Image of Yosemite National Park, California]
Fortune Cookie:

“Your romantic life is interesting only to you.”

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
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.
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.
Workshops for Interpretive Professionals in Parks and Museums
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.
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!!!!!! 😊
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
PAIRing People with Parks

(PAIRE) Presentation Technique, Audience Characteristics, Interpretation Methods, Resource Information

(Park) Park Visitors (Adopted from Allyson Mathis, Grand Canyon National Park)
PAIRing People with Parks

(Presentation Technique) (Interpretation Methods) (Audience Characteristics)

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

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
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?
Progression of Interpretive Program

Start

Step 1

Step 2

Step 3

Step 4

Step 5

Step 6

Step 7

Step 8

Step 9

Step 10

Step 11

End

Olympic NP, Washington

Meaning

Information
The **Goal** of an Interpretive Program is to provide increased **Information and Meaning**.
Revelation based on Information

Interpretation is not just Meaning

Interpretation is Revelation based on Information
Goal is to **increase** Information and Meaning

- Audience prior to start of program
- Audience at end of program
Level of General Audience at Start of Program (Humans? Living Things? Geology?)

- Information
- Meaning
- Humans
- Living Things
- Geology
Net Change is Key

Information

Meaning

Geology

Living Things

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

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
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.

Mt. Rainier National Park, Washington