

## DATES TO REMEMBER

- ❑ **Until May 26: Course evaluation period.**  
Check your Hunter e-mail for instructions.  
Smartphone: [www.hunter.cuny.edu/mobile](http://www.hunter.cuny.edu/mobile) Computer: [www.hunter.cuny.edu](http://www.hunter.cuny.edu)
- ✓ **PAST May 12: REQUIRED (25%) ROADTRIP EXERCISE WAS DUE;** late penalty assessed starting May 13.
- ✓ **TODAY, May 16:** Last class lecture and **last day for pre-approved extra credit** (paper or other project).
- ❑ **May 23: Exam III: The Final Exam**
  - From 9 AM to 11 AM << note different time from class
  - Same format as exams I and II.
  - **Last day** to hand in Exam III extra credit exercise and "Landscape Analysis" extra credit option.

## Regional Landscape Studies

- ✓ NORTHLANDS
- ✓ NORTHEAST COAST
- ✓ MEGALOPOLIS
- ✓ CANADA'S NATIONAL CORE
- ✓ AMERICA'S HEARTLAND
- ✓ APPALACHIA and the OZARKS
- ✓ THE SOUTH
- ✓ GREAT PLAINS and PRAIRES
- ✓ MOUNTAINS, PLATEAUS and BASINS: The Empty Interior
- ✓ DESERT SOUTHWEST
- ✓ NORTH PACIFIC COAST
- > HAWAII

<<<For each region:

1. Know its physical geography.
2. Identify its unique characteristics.
3. Be able to explain the human imprint.
4. Discuss its sequence occupancy and economic development.

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# Regional Landscapes of the United States and Canada

## HAWAIIAN ISLANDS

Prof. Anthony Grande  
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## Hawaiian Islands

The State of Hawaii is much more than "the 8 main islands." Over 125 islands extend nearly 1500 miles across the Pacific Ocean.

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## Hawaiian Islands

When you think about this region, what images come into your mind?

Tropical paradise  
Great beaches  
Pineapples  
Volcanoes  
Polynesian culture  
Honolulu  
Aloha shirts/Muumuus  
Sunshine

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## OVERVIEW: Physical Geog.

- **Mid-Pacific Ocean location**  
2,400 mi from California and Alaska.  
(3800 mi. to Tokyo/5100 mi to Sydney)
- **Tropical in nature; south of Tropic of Cancer** (23°30'N).
- **Located over a geologic hot spot.**
- **Island chain:** consists of >125 islands above sea level; hundreds of "island stubs" (called seamounts) below level level.
- **Natural landscape varies with an island's age** (erosion and vegetation cover).

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## OVERVIEW – Human Geog.

- **Last area on Earth to be discovered and settled:** Polynesians arrived c.500 AD
- **Europeans arrived in 1778; Americans in early 1800s.**
- **Until 1791 unification under King Kamehameha,** area existed as individual island kingdoms.
- **Americans rebelled in 1893.**
- Today there are **8 inhabited islands** with a diverse population: Polynesian, Asian and Anglo influences.
- **Modern population is concentrated around Honolulu.**
- **Tourism and military-based economy.**
- **Ethnic Hawaiian culture is on a rebound.**

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## 2010 Population Density on the main islands

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## Geologic Setting

- ❖ **Islands are volcanic in origin** located over a **hot spot** on the earth's crust.
- They are the visible portion of a **volcanic chain** that runs NW to the Kuril and Aleutian trenches.
  - ✓ No longer active underwater volcanic structures are called **"seamounts."**
  - ✓ **Active volcanoes** above sea level are found only on **Hawaii** (Big Island) which is now over the hot spot.
  - ✓ There is one underwater volcano, called **Loihi**, SE of Hawaii.

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## Geologic Hot Spot

- ❖ **Hot Spot:** zone of weakness in the lithosphere that allows molten material to reach the surface.
- **Movement of the Pacific Plate over the Hawaiian hot spot creates volcanoes on the crust.** The longer an island stays over the hot spot, the wider/taller the volcano gets.
- **When the island moves away from the hot spot, volcanic activity ceases.** The island erodes and shrinks both in height and width.

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## Mauna Kea and Mauna Loa World-ranking topographic features

**Mauna Kea is 13,796 ft above sea level.** The ocean floor is over **18,000 ft below** sea level. From the ocean floor to its summit, Mauna Kea is **32,000 ft. high**, making it the world's tallest mountain. It is dormant.

**Mauna Loa is 13,677 ft high** and is the world's largest volcano because of its width and mass. It is active.

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## Sandy Beaches

Most beaches are **light brown-colored** from pulverized volcanic rock and washed up ocean sediment. **Pink and white "sand"** is from coral. **Black, red, and green "sand"** come volcanic cinder and ash, not grains of sand.

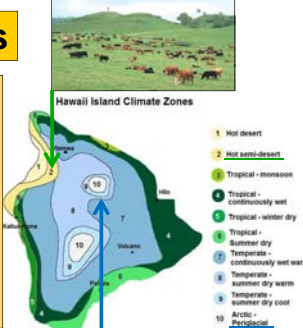
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## Climate Zones

On the islands, **climate zones form in relation to elevation and wind direction.**

Predominant wind is from the northeast.


On Hawaii (Big Island), **ALL climates exist** (except icecap) because of the height of the volcanoes. **Receives snow in winter.**



**Hawaii Island Climate Zones**

- 1 Hot desert
- 2 Hot semi-desert
- 3 Tropical - monsoon
- 4 Tropical - continuously wet
- 5 Tropical - winter dry
- 6 Tropical - Summer dry
- 7 Tropical - continuously wet warm
- 8 Temperate - summer dry warm
- 9 Temperate - summer dry cool
- 10 Temperate
- 11 Arctic - Periglacial

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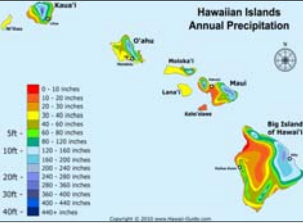

## Precipitation

**Seasonal Variation**

- Drier summer May to Oct
- Moister winter Oct to April

**Orographic Rainfall**

- North and east sides of islands are rainier.
- **Mount Waialeale (Kauai)** gets 485 in. of rain each year (**one of the wettest places in the world**)
- **Waimea, 15 mi. away,** gets less than 20 in. per year.
- South and west portions of the islands are drier.
- Snow at the summit of Mauna Loa and Mauna Kea

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## Giant Waves

Winter storms off the coast of Oregon and California in the North Pacific generate waves by wind action.

**Northeasterly winds push water toward mid-Pacific where the Hawaiian Islands are "in the way" of ocean swells.**

The swells break in shallow water creating waves up to **50 ft. high** along the northeast shores of the islands.





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## Tsunami Zone

Hawaii is located at the crossroads of **tsunami paths** generated by earthquakes occurring along the Ring of Fire.





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## Polynesia

Ancient Polynesians were advanced in shipbuilding and navigational techniques. They had to be able to get back to their home island!

**Hawaii is considered the northern outpost of Polynesian culture realm.**

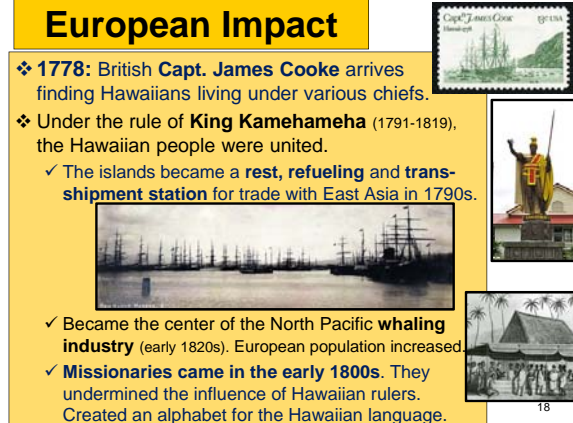
Polynesians from the South Pacific settled here c.1500 yrs ago. Migrated by canoe from the Marquesas Islands, 2500 miles to the southeast. Second wave of people arrived c.1,000 AD.

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## European Impact

- ❖ **1778:** British Capt. James Cooke arrives finding Hawaiians living under various chiefs.
- ❖ Under the rule of **King Kamehameha** (1791-1819), the Hawaiian people were united.
  - ✓ The islands became a **rest, refueling and trans-shipment station** for trade with East Asia in 1790s.
- ✓ Became the center of the North Pacific **whaling industry** (early 1820s). European population increased.
- ✓ **Missionaries came in the early 1800s.** They undermined the influence of Hawaiian rulers. Created an alphabet for the Hawaiian language.



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## Hawaiian Whaling Area

## European/American Impact

- ❖ **King Kamehameha dies in 1819.**
  - Competing European efforts to fill the power vacuum (France 1820-50s; Britain 1840s).
  - The influence of American plantation owners grew in the late 1800s.
  - Led to the overthrow of Hawaiian rulers in **1893** and the declaration of the **Republic of Hawaii**. (Feared return of monarchy and European control.)
- ❖ **Annexed by the U.S. in 1898.**
- ❖ **Statehood in 1959.**

## U.S. Government

- ❖ Today the Federal Government controls much of the land on the islands especially with military facilities.
- **Military**
  - Strategic location both historic and present
  - Headquarters of Pacific Command and center of Pacific operations for all services.
- **Impact**
  - Owns 25% of Oahu: bases + housing for personnel
  - Employs 25% of work force
  - Vulnerability to budgetary cutbacks and changes in military policy.

## Pearl Harbor

Pearl Harbor is a large lagoon on Oahu. Its protected harbor made it an ideal naval base, but the narrow inlet is a liability.

The lagoon was deepened in the early 1900s to accommodate large ships.




*On Dec 7, 1941 it was the target of a Japanese air attack.*

## Agriculture

- Chief categories for local consumption:**
- **Livestock**
  - Beef cattle
  - Dairy cattle + products
  - Poultry and eggs
  - Hogs
- **Vegetables and fruits.**
- **Cash crops include:**
  - Sugar cane + processing
  - Pineapples + processing
  - Horticulture, esp. flowers
- **Specialty items include:**
  - Kona coffee
  - Macadamia nuts
  - Avocados
  - Guava

## Pineapple Plantation



## Sugar Cane Field and Mill

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## Tourism

- **Mixed blessing?**  
Chief income earner and employer with associated problems.
- **Popular perception as tropical paradise from late 1800s.**
- First scheduled trans-Pacific flights in 1936, but ships remained primary transportation to 1950s.
- Increased visitors
  - Larger aircraft
  - Economic growth
  - Expendable income and more leisure time
  - No longer limited to Honolulu

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## Honolulu




**City dominates the state.**  
 State capital  
 72% of residents  
 80% of economy  
 Symbolized by Diamond Head and Waikiki  
 Hemmed in by the ocean, mountains, Federal land

- High living costs
- Congestion
- Pollution

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## The Islands: Oahu

- Heart of the state.
- Site of Honolulu.
- Densely populated/intensively used.
- Location of Pearl Harbor and Waikiki
- Polynesian Cultural Center
- Site of giant waves in winter.


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## The Islands: Maui

- Second largest island; composed of 2 volcanoes separated by a central lowlands.
- **Lahaina** was the capital of the Kingdom of Hawaii and the center of Pacific whaling fleet.
- Intensive tourist development.









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## Haleakala Caldera Maui

Rim is above the clouds. Have to drive through the clouds to get to the national park.





**Volcanic craters within the Haleakala Caldera.** Volcano was formed 800,000 - 1 mil yrs ago; last eruption in 1750.

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## The Islands: Hawaii

- ❖ **Hawaii** ("Big Island")
  - **Largest/southernmost island.**  
All other islands can fit within it.
  - **Dominated by five huge shield volcanoes;** experiences ongoing eruptions. Hawaii Volcanoes Nat'l Park.
  - Has large cattle ranches, and sugar cane and coffee plantations.
  - **Hilo** (east coast) is the old resort area.
  - **Kona Coast** (west side) is the new resort area.
  - Several **national historic sites** are here.



## Volcanic Activity on Hawaii

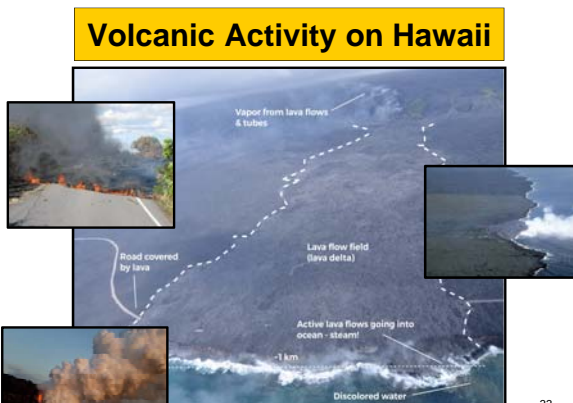


**Kilauea is the current active volcano on the island of Hawaii.**

[https://photos.state.gov/libraries/hawaii/11565/multimedia\\_chronology.html](https://photos.state.gov/libraries/hawaii/11565/multimedia_chronology.html)

[https://www.nytimes.com/2017/02/20/science/hawaii-lava-stream.html?\\_r=1](https://www.nytimes.com/2017/02/20/science/hawaii-lava-stream.html?_r=1)

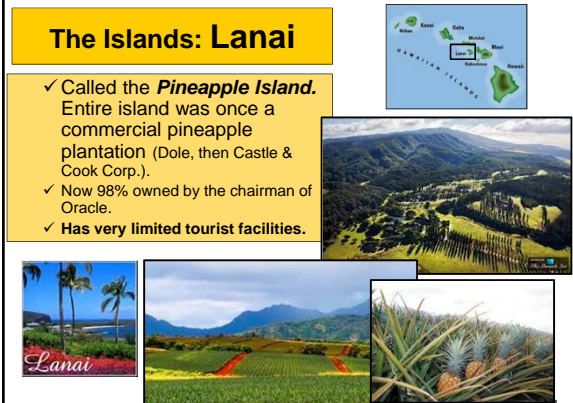
## Volcanic Activity on Hawaii



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## The Islands: Lanai

- ✓ Called the **Pineapple Island**.  
Entire island was once a commercial pineapple plantation (Dole, then Castle & Cook Corp.).
- ✓ Now 98% owned by the chairman of Oracle.
- ✓ **Has very limited tourist facilities.**



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## The Islands: Kauai

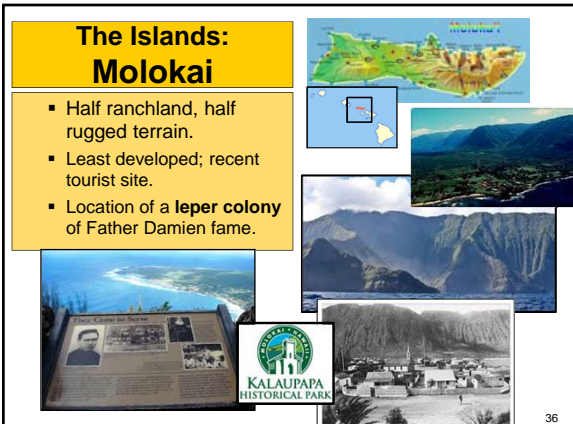
- **Oldest and greenest main island.**
  - Heavily eroded into spectacular scenery.
- **Contains one of the wettest spots on earth:** Mt. Waialeale averages **485 in/year**.
- Lush vegetation; called **Garden Island**.



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## The Islands: Molokai





- Half ranchland, half rugged terrain.
- Least developed; recent tourist site.
- Location of a **leper colony** of Father Damien fame.



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## The Islands: Niihau

- Westernmost main island.
- Second smallest.
- Privately owned since 1864; current owner: Niihau Ranch Co.
- Dubbed "Island of Yesterday" and "Forbidden Island" because of long history of limited access.


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## The Islands: Kahoolawe

- Flattest, driest and smallest of the main islands.
- Formerly a bombing range for the US military, now returned to the state.

**Kahoolawe access**  
Computers are included as part of an access plan for Kahoolawe since the Navy finished its cleanup work in November 2002. Statewide hearings on the plan began tonight in Kona.




# Postcards from America Course Wrap-Up

## "Story Behind the Scenery"

**Geographers need to be aware of, be versed in and be able to convey any "background story" to make location analysis easier and planning more thoughtful.**

1. **Observe.** (Don't just look, SEE!)
2. **Find the clues,** both physical and human.
3. **Evaluate the affect of human-environment interaction.**
4. **Look for decision-making influences.**
5. **Look for changes over time.**
6. **Recognize the human imprint** (technology and "modernization").
7. **Appreciate the landscape** (travel, exploration, painting, literature, photography, tourism, sharing).
8. **Help preserve the landscape** (maintaining/protecting/limiting artificial change).

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## LANDSCAPE

**WE ASKED ABOUT LANDSCAPES:**  
*What is that?  
 Why is it there?  
 Why does it look that way?  
 Who or what created it?  
 How does it work?*

❖ Landscape development and analysis was the underlying theme of the course. US&C regions were the sources of examples.




- ✓ We defined "landscape."
- ✓ We saw how it was created: product of location, place and time.
- ✓ We saw that it changes over time: dynamic, not static; natural + human influences.
- ✓ Landscape conveys messages (some real; some perceived) and influences people; we got a sense of what a place was like. We can recognize places without labels.

➤ Now you need to experience it!

## The End

**Except for the Final Exam on TUESDAY May 23 at 9 AM**



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