Dylan Castle
2/28/13
Geology 202
Preliminary Outline

Erosion Processes and Hazards on the Oregon Coast

I. Introduction

II. Geologic Overview
- A. Tectonic Setting
  - 1. Convergent Zone of plates
  - 2. Formation of Coast Range
  - 3. El Niño

III. Geologic History
- A. Sea Levels
  - 1. Rising
- B. Former El Niños
  - 2. '82-'83 El Nino
- C. Tsunamis and Floods
  - 1. Flood Factors

IV. Forms of Erosion
- A. Storms
- B. Beach Type
- C. Wind Factor

V. Hazards of Erosion
- A. Rockfall
- B. Property Damage

VI. Summary and Conclusion

Good start outline ✓

References

Good resources

Department of Geology and Mineral Industries Geologic Hazards on the Oregon Coast. (n.d.). *Department of Geology and Mineral Industries Geologic Hazards on the Oregon Coast*. Retrieved February, 2013, from http://www.oregon.gov/dogami/pages/earthquakes/coastal/coastalhazardsmain.aspx

Komar, P. D. (1992, January). *Ocean processes and hazards along the Oregon Coast*. Retrieved February, 2013. ✓

Komar, P. D. (1998, May/June). *El Nino and coastal erosion in the Pacific Northwesr*. Retrieved February, 2013. ✓

Pacific Northwest Geologic Mapping and Urban Hazards. (2012, December 17). *Pacific Northwest Geologic Mapping and Urban Hazards*. Retrieved February, 2013, from http://geomaps.wr.usgs.gov/pacnw/rescasp1.html

Sara Chavez

Outline for Term Paper

Oregon Plan for Salmon Restoration

I. Introduction
   A. What is river restoration?
   B. The importance of river restoration for Coho salmon
   C. What happened to cause the need for restoration
   D. The locations projects were started to help the Coho salmon

II. Geologic Overview
   A. Graph showing the increase in salmon from 1992-2006
   B. East Hubug Creek, Clatsop County
   C. The importance of Marsh flies
   D. Green River and Crab Creek, Lane County
   E. Knowles Creek, Lane County
   F. Willach Creek, Coos County
   G. History of Coho salmon habitats

III. Influence of salmon restoration on landuse
   A. The oceans effect on salmon
   B. Limiting factors
   C. Activities to help salmon

IV. Summary and conclusion
   A. What we can do to help
   B. Restoration plans for the future

V. References Cited

   A. Department of Environmental Protection, 2013, Benefits of Stream Restoration: Internet web resource, http://www6.montgomerycountymd.gov/dectmpl.asp?url=/Content/dep/water/restorationBenefits.asp (Last updated Feb 27, 2013).

Hannah Deede

ES 202 Preliminary Outline

March 1st 2012

Soils of Willamette Valley

I. INTRODUCTION
overview of importance of soils
II. ~~GEOLOGIC~~ PHYSIOGRAPHIC SETTING
- PLATE TECTONICS
- BEDROCK GEOLOGY/HISTORY
- LAND USE
III. REGIONAL SOILS
SMALL WATERSHED
IV. CONCLUSION
V. REFERENCES CITED

Introduction:

A. Uniqueness of the Willamette Valley

B. Why the soils geology of Willamette Valley makes it a great place to live

C. Importance of understanding the past of the soil composition and make-up to

History of soil/ geomorphology:

A. Why Willamette Valley looks the way it does today, processes that created it

B. Composition of soils directly related to those processes/ parent material

C. Timespan and full morphology of soils in the Willamette Valley

Soil Composition:

A. Minerals

B. Texture

C. Profile, formation, and organic matter

D. Living organisms

E. Climate

Christopher Defeyter

ES202

Term Paper Outline: flood hazards of the Willamette valley.

I. Introduction:

1. Brief History of Willamette valley floods
    a. 1964
    b. 1996
2. Why we care… cause we live here!

Main Body:

Definition of flood: "an event during which the colume of water in a stream becomes so great that it covers areas outside the streams normal chanel" Text g8.

1. Causes of flooding in the Willamette valley
    a. Snow melt
        i. Spring thaw
    b. Rain fall (Oregon "rainy" season
    c. dams
2. Willamette valley flood plains
    a. Willamette river flood plain
        i. Floods of 1861 and 1890.

        http://www.fsl.orst.edu/pnwerc/wrb/Atlas_web_compressed/3.Water_

        Resources/3e.flood&fema_web.pdf

I. INTRODUCTION
STATEMENT OF PROBLEM
II. ~~GEOLOGIC~~ PHYSIOGRAPHIC SETTING
A. GEOLOGY
B. CLIMATE & LAND USE
III. FLOOD PROCESSES — OCCURRENCE/CAUSES
IV HAZARD MITIGATION
V. CONCLUSION
VI. REFERENCES CITED

Kalei Haake

February 26, 2013

Geology 202

TITLE?!

Term Paper Outline

Introduction

Erosion:

Human Factors- Buildings

- Homes
- Residential areas near the coast

Natural Factors- Weathering

-Chemical and Physical

-Wind

-Rain

Hazards:

Storms- coast

-Beach

-dunes

-landslides

-Gradual and cumulative

Threats- Human Properties

-Human Lives

Summary and Conslusion
Works Cited

COASTAL EROSION PROCESSES ON OREGON COAST

I. INTRO

II. GEOLOGIC A. TECTONICS B. EROSION C. LANDSCAPE

III. COASTAL PROCESSES
- WAVE ENERGY
- STORMS

IV. HAZARDS MITIGATION

V. CONCLUSION

VI. REFERENCES CITED

Greg Helstrom – Earth Science 202 Geomorphology Writing Assignment: OUTLINE

North-central Oregon High Desert Geologic Setting

Introduction: North Central High Desert Primarily consists of four formations: First the Miocene and younger volcanic and sedimentary rocks. The second formation group is the John Day Formation, of the late Eocene – early Miocene Period. The third group is the Clarn Formation of the Eocene period. And Finally the Mesozoic and Paleozoic rocks.

Geographic Location: ~43.75° - 46° Latitude, ~122° - 118° Longitude. This Region of Oregon is ~ 4000 ft elevation and on the leeward side of the Cascade Range rain shadow, resulting In a high desert.

Tectonic Setting: Oregon is on the Subsuction Zone Where the Juan de Fuca Plate is being subducted under the North American Plate. Resulting in High volcanic Activity in the North – Central High Desert region of Oregon.

Basement Rocks: Highly deformed metasediments of Permian to Triassic age. In some areas of the region basement rock is overlain by a thick layer of Cretaceous marine rock, such as in Mitchell area of central Oregon.

Clarno Formation: Non-marine volcanic and volcaniclistic units that range is age from middle to late Eocene 54 – 39 m.y.ago.

John Day Formation: Complex formation consists or rhyolitic ashflow tuff and dacite to rhydacitic tuffs as well as alluvial deposits of the latest Eocene, Oligocene, and Early Miocene periods, ~ 22 – 39m.y. ago

Influences and Geology on Landuse: Today these formations are cut by rivers, which are heavily used for river rafting, fishing, and other water recreational uses. Hiking, private ownership, and Native Reservations are all modern day land uses for this entire region

Summary and Conclusions:

Refrences Cited:

National Park Service: http://www.nps.gov/joda/clarno_unit.htm

Wikipedia: http://en.wikipedia.org/wiki/John_Day_Fossil_Beds_National_Monument

SEE TEMPLETON FOR PAPERS HE HAS A COLLECTION OF PUBLISHED WORK

I. INTRODUCTION

II. GEOLOGIC SETTING
A. PHYSIOGRAPHY
B. BEDROCK GEOLOGY
C. TECTONICS

III SURFACE GEOLOGY & GEOLOGIC HISTORY

IV. CONCLUSION
V. REFS. CITED

Ben Johnson

2/28/13

ES 202

Missoula Flood Story

1) Introduction
    a. Brief explanation
2) What happen
    a. Ice dam melts
3) Where it happen/ Evidence
    a. Pacific Northwest
    b. Moved rocks, cut out canyons, Missoula lake
4) Flood hypothesis/Bertz
    a. Single flood
    b. Multiple flood
5) Conclustion

I. INTRODUCTORY OVERVIEW

II. GLACIAL HISTORY OF PNW

III. MISSOULA FLOODS
A. EVIDENCE/
B. HISTORY

IV. CONCLUSION

V. REF. CITED

U/O NEED 5 to REFERENCES

EMAIL ME — MANY PAPERS AVAILABLE

Thomas licata

The dangers of seismic activity in the Willamette valley

-briefly describe seismic past over recent years
-list dangers

http://www.corvallisadvocate.com/2012/1213-corvallis-earthquakes/

Liquifaction is also something to stay concerned about.
http://geology.about.com/od/liquefaction/a/liquefaction.htm
Much like when you put a marble on top of a bucket of sand and shake the bucket the marble goes down, earths surface can work in the same way in areas with sand, silt, etc.

http://oregonstate.edu/instruct/geo380/study-380.html

FOCUS ON LIQUEFACTION HAZARDS IN WILLAMETTE VALLEY

TOO GENERIC

NOT AN OUTLINE

SEE CLASS WEBSITE FOR GUIDE

I. INTRODUCTION

II. REGIONAL GEOLOGIC SETTING

III. PLATE TECTONICS EARTHQUAKE OCCURRENCE

III. LIQUEFACTION PROCESS

A. FACTORS

IV. HAZARDS MITIGATION

V. CONCLUSION

VI. REFERENCES CITED

Term Paper Outline: Jacob Matocha

I. Title: Tsunami and Seismic Record of the Oregon Coast: Seismic Activity in the Past

II. Tectonics

- A. Formation of Oregon Coast Range
- B. Volcanic activity overview
- C. Plate boundary off the Oregon Coast

III. Seismic activity

- D. Past seismic events
  - 1. Location
  - 2. Magnitude
  - 3. Duration
  - 4. Damage inflicted
- E. Graphs and Data
- F. Predictions for the future

IV. Tsunami activity of the Oregon coast

- G. Past Events
  - 1. Location
  - 2. Size/speed
  - 3. Damage
- H. Correlation to seismic activity
- I. Graphs and Data

V. Detection and Prevention

- J. Past and present
- K. (Expanded upon in second outline)

VI. Conclusion

VII. Reference Index

LIST??

I. INTRODUCTION

II. PLATE TECTONIC SETTING/ OVERVIEW

III. SEISMIC HAZARDS

IV. SEISMIC RECORDS HISTORY

A. TSUNAMI RECORD

i. LAND BASED

ii. MARINE

V. IMPLICATIONS FOR HAZARDS MANAGEMENT

V. CONCLUSION

VI. REF. CITED

Diana Menna
Term Paper Outline
28 February 2013
Geology 202
Landslide Mitigation in Marion County, Oregon

I. Landslide Hazard in Marion County
1. Three Major areas are subject to landslides
1. Western Salem Hills, North of Santiam River, Southeast of Scotts Mills
2. Moderate to high susceptibility to water and earthquake induced landslides
1. Sedimentary rock near Salem susceptible to large slides
2. Removing vegetation from very steep slopes

II. Current Landslide Mitigation
1. Oregon Department of Forestry
1. Tracks storms, monitors rain gauges, issues warnings
2. Marion County Landslide Ordinance
1. Natural hazard inventories, thorough site examination inventories, weather induced and earthquake induced landslide maps
3. Landslide Hazard Study
1. Actively involving citizens
4. Oregon State Senate Bill 12
1. Preventing timber harvest from high risk areas
2. Closing roads dangerous to humans because of landslide risk
3. Information distribution of hazards

III. Future Landslide Mitigation
1. Regulation to reduce risk from potential landslide events
2. Mitigation Plan Goals
1. Education, Public awareness, Preventative

RESOURCES =

University of Oregon: Marion County: Natural Disasters Mitigation Plan
https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/4006/Marion_County_Hazard_Mitigation_Plan.pdf?sequence=1

USGS: Landslide Hazards Program: Oregon
http://landslides.usgs.gov/regional/inventory/oregon/

Landslide Hazard Planning: Incorporating Scientific Analyses into Public Policy
by Peter Gutowsky, AICP, and Les Sasaki
http://blog.oregonlive.com/pdxgreen/2008/01/Practicing%20Planner.pdf

Steve Emerson
ES 202 3/1/13
Term Paper Outline

Soils Geology in the Mid-Willamette Valley

I. Introduction

   A. Background information about the Willamette Valley

II. Geologic Overview of the Area

   A. Formation

      a. Floods (Missoula)

      b. Tectonics

   B. Climate

      a. Effect on soil formation

   C. Land use

      a. Agricultural

      b. Forestry

III. Summary & Conclusion

IV. References

   A. "TECTONIC SETTING OF THE WILLAMETTE VALLEY"

      https://gsa.confex.com/gsa/2002CD/finalprogram/abstract_34175.htm

   B. www.fs.fed.us/land/pubs/ecoregions/ch24.html

   C. https://www.**soils**.org/publications/sssaj/pdfs/34/3/SS0340030485

   D. http://en.wikipedia.org/wiki/Willamette_Valley

Chase Connor

The Tsunami Hazards Associated with the Central Oregon Coast

I. Intro
   A. What's a tsunami
   B. Whys it bad
   C. Why is the Oregon Coast at risk

II. Geology that plays into the threat
   A. Juan De Fuca Plate of the coast is due for major seismic activity would could set off and earth quake and potentially a Tsunami
   B. We live along the Ring of fire, one of the most active fault areas in the world, making the threat of any seismic action very real.
   C. Fault boundaries and what causes these killer waves

III. Why Tsunamis could be so dangerous to the central Oregon Coast
   A. The Geography of the central Oregon Coast traps people between hills and seas, thus making large scale evacuation very difficult
   B. Coastal Communities are tourist hubs, if a Tsunami were to hit during the wrong season the loss of life would be very major
   C. Most of the Central Oregon Coast have sandy beaches, not cliffs that would help absorb some of the energy from the Tsunami

IV. What can be done to limit the devastating impacts of these silent killers?
   A. Increase statewide awareness of the dangers of Tsunamis in order to help save tourists that visit the coast.
   B. Improve the road ways between the valley and the coast
   C. Improve signage of Tsunami save zones
   D. Create community leaders to head up information sessions for residents

V. Conclusion

VI. Sources used:

http://www.usgs.gov/
Geology Text Book
http://www.lincolncountysheriff.net/emergency/earthquake-tsunami.html
http://www.oregon.gov/OMD/OEM/Pages/plans_train/tsunami_in_or.aspx
http://www.oregongeology.org/tsuclearinghouse/faq-tsunami.htm
http://www.tsunami.noaa.gov/
http://www.bt.cdc.gov/disasters/tsunamis/

Austin Andersen
ES 202

Groundwater issues in the Pacific Northwest

I. 1. Introduction
- -Climate of the PNW
- -Geography of the PNW
- -Where does groundwater need to be

II. 2. Groundwater in the PNW
- - Where does the groundwater come from
- -How is groundwater obtained
- -Groundwater management and public risks
- -Problems with obtaining and managing groundwater

III. 3. Conclusions
- -Future of groundwater resources
- -Changing climate
- -What are we doing about our groundwater problems

VICKI BERGQUIST
ES 202

Glacial History of Oregon

Vicki Berquist

Focus on Mt Hood

Introduction

1. Brief description of the formation of the Cascades
2. Basics of glaciers

Body

1. Historical glacial records of Mt. Hood
2. Present day glaciers
    a. The rise and fall of glaciers on Mt Hood
    b. Eliot Glacial Study/ Portland State University
3. The connection between glaciers and rivers
4. Effects of these glaciers on local areas

Summary and Conclusion

References Cited

"Contents." *Glaciers of Oregon*. N.p., n.d. Web. 26 Feb. 2013.

"Glaciers in Oregon | Oregon Encyclopedia - Oregon History and Culture." *Glaciers in Oregon | Oregon Encyclopedia - Oregon History and Culture*. N.p., n.d. Web. 26 Feb. 2013.

"Holocene Fluctuations of the Coe Glacier, Mount Hood, Oregon | Glaciers of the American West." *Holocene Fluctuations of the Coe Glacier, Mount Hood, Oregon | Glaciers of the American West*. N.p., n.d. Web. 28 Feb. 2013.

Jackson, Keith M., and Andrew G. Fountain. "Spatial and Morphological Change on Eliot Glacier, Mount Hood, Oregon, USA." *Jackson Fountain Annals* (n.d.): n. pag. *Jackson_fountain_annals.pdf*. Web. 28 Feb. 2013.

TITLE: Geologic Changes in Northern CA.

Richard Brown

I. Introduction

II. Geologic Setting/ Overview

III. Case Studies

Loma Prieta Landslide 1989 III A.

Landscape conditions before landslide

Causes

After effects

Alameda County Landslide 1971 III B.

Landscape conditions before landslide

Causes

After effects

IV Conclusions

V. References

Keefer, D. (Ed.). (1998). *The Loma Prieta, California, earthquake of October 17, 1989.* Washington: U.S.G.P.O.

Nilsen, T.H., Taylor, F.A., & Brabb, E.E. (1976). *Recent landslides in Alameda County, California (1940-71) : an estimate of economic losses and correlations with slope, rainfall, and ancient landslide deposits.* Washington: U.S.G.P.O

Stanley Cabanas
Geology
February 28, 2013

TITLE ✓

Outline

River Restoration

I. INTRODUCTION — Provide overview of problem

II. FLUVIAL PROCESS IN OREGON
- Rivers in Oregon
  - Types of rivers

III. — SALMONID HABITAT
- River wildlife
  - Salmon types

- Salmon
  - Survival needs

IV. CONCLUSION

V. REFERENCES CITED

what are your sources??

Jaimie Myaing
ES202—Dr. Taylor
Preliminary Outline
3/1/13

TITLE.

I. INTRODUCTION/ OVERVIEW

II. GEOLOGIC SETTING A. ECOSYSTEMS & GEOLOGY

III. CLIMATE HISTORY LATE PLEISTOCENE

IV. MT. HOOD/ GLACIAL HISTORY

V. CONCLUSION

VI. REF. CITED

PRELIMINARY OUTLINE

I. Introduction
II. Background of Pleistocene era and Oregon Cascades
III. Snow and ice features of Mt. Hood
IV. Main glaciers of Mt. Hood
V. How these glaciers likely formed
VI. Ways in which Mt. Hood glaciers affect surrounding environment

REFEERENCES

Fountain G. Andrew. "Glaciers in Oregon." *The Oregon Encyclopedia.* Portland State University, 2013. Web. 27 Feb. 2013.

"Glaciers at Mount Hood, Oregon." *U.S. Geological Survey.* USGS, 28 Sep. 2012. Web. 27 Feb. 2013.

Jackson, Keith. "Glaciers of Oregon." *Glaciers of the American West.* Portland State University, 11 June 2011. Web. 27 Feb. 2013.

Lillquist, Karl, and Karen Walker. "Historical Glacier And Climate Fluctuations At Mount Hood, Oregon." *Arctic, Antarctic, And Alpine Research* 38.3 (2006): 399-412. *GeoRef.* Web. 28 Feb. 2013.

Sarah L. Lewis, et al. "Present-Day And Future Contributions Of Glacier Runoff To Summertime Flows In A Pacific Northwest Watershed; Implications For Water Resources." *Water Resources Research* 46.12 (2010): @CitationW12509. *GeoRef.* Web. 28 Feb. 2013.

Earthquake Hazards in Oregon

ES 202

Guy Perrin

2/24/13

TITLE

Megan Stinson

Outline

ES 202 Final Paper

I. Introduction
   - A. Liquifaction
   - B. Portland
   - C. Earthquake Hazards

II. Liquifaction
   - A. Definition
   - B. Processes
   - C. Dangers

III. Portland
   - A. Tectonic processes
   - B. History of earthquakes
   - C. Architecture

IV. Earthquake Hazards
   - A. Hazards in Portland
   - B. Other hazards (besides liquifaction)

V. Conclusion
   - A. History of earthquakes rehash
   - B. Hazards of liquefaction rehash

OVERVIEW

I. INTRODUCTION STATEMENT OF PROBLEM

II. GEOLOGIC SETTING PLATE TECTONICS

III. SEISMIC HISTORY

IV LIQUEFACTION PROCESSES

V. PORTLAND HAZARDS & MITIGATION

VI. CONCLUSION

VII. REF CITED

Symone Stinson
ES202
Term Paper Outline 1

TITLE Hwy 20

Term Paper Outline

I. Introduction

II. Geologic Overview
- A. Tectonic Setting
  - i. Cascadia Subduction Zone
    1. Oblique subduction angle
    2. 'turning' of southern Oregon
  - ii. Accretionary wedge

- B. Bedrock Geology
  - i. Siletz volcanics
    1. Ma
    2. Formed sub-aqueous
    3. 'Flood' basalts
    4. Underlying basement rock of Coast Range and Willamette Valley
  - ii. Tyee Formation
    1. Ma
    2. Deltaic sediment
    3. Sandstone and shale
  - iii. Quaternary soils

III. Hwy 20 LANDSLIDE CASE STUDY

- A C. Landscape history
  - i. Turning of Tyee formation
  - ii. Accretion of materials
  - iii. Paleo-landslides
  - iv. Land-use
    1. Timber Industry
    2. Agriculture

- B D. Construction issues due to landforms
  - i. Overview of Hwy 20 project
  - ii. Reactivation of ancient slides
    1. Failure planes not correctly identified
    2. Oversteepening of hillslopes
    3. Misidentifying landforms
    4. Creep identified from bridge pillars

- C E. Mitigation techniques
  - i. Ground water removal at failure plane

Spencer Trautmann

Professor Taylor

2/28/13

Outline

Seismic/Earthquake Hazards in PNW

(Still Thinking of an Appropriate Title)

- Why does the PNW have so many earthquakes?
  - On fault line
  - Tectonic plate sliding
  - Different types of plates

- What are the hazards?
  - Steep gradients
  - Soft land
  - Buildings
    - Bad structure/falling
  - Flooding
  - Fire

- How are earthquakes measured?
  - Use seismograph
    - How seismographs work
  - Seismograph readings
    - Magnitudes
  - Recording and comparing data

- Different kinds of earthquakes
  - S waves
  - P waves
  - Where they occur

TOO BROAD

focus on TSUNAMI HAZARDS @ COAST,

I. INTRODUCTION

II. TECTONIC SETTING

III. SEISMIC HAZARDS

IV TSUNAMI PROCESSES & RECORD

V. HAZARD MITIGATION

VI. CONCLUSION

VII. REFERENCES CITED