

TITLE OF PAPER OR SENIOR THESIS

by

Student's Full Name

Major

Expected Year of Graduation

Thesis (or paper) submitted to the Faculty of the Department of  
Geography and the Environment, Villanova University in partial  
fulfillment of the  
requirements for the degree of Bachelor of XXXXX  
Year of Graduation

Thesis Advisor:

Dr. Nick C. Jones  
Associate Professor of Geography

## ABSTRACT

Title of Project:

The abstract should be about 150 to 250 words long. The abstract should be single-spaced with no special formatting. It is intentionally kept short, but should be highly descriptive and do almost as much work as the multi-page paper that follows it. The abstract should include a sentence or two addressing each of the following sections. An abstract does not include an in-text citations or references. Your advisor may alter your abstract requirements given the scope of your research project.

**Motivation:** *Why do we care* about the problem and the results? This section should include the importance of your work, the difficulty of the area, and the impact it might have if successful.

**Problem statement:** What *problem* are you trying to solve? What is the *scope* of your work? In some cases, it is appropriate to put the problem statement before the motivation, but usually this only works if most readers already understand why the problem is important.

**Approach:** *How did you go about solving* or making progress on the problem? What was the *extent* of your work? What important *variables* did you control, ignore, or measure?

**Results:** *What's the answer?* Put the result there, in numbers, if practical. Avoid vague, hand-waving results such as "very," "small," or "significant."

**Conclusions:** *What are the implications* of your answer? Is it going to change the world (unlikely), be a significant "win", be a nice hack, or simply serve as a road sign indicating that this path is a waste of time (all of the previous results are useful). Are your results *general*, potentially generalizable, or specific to a particular case?

## LIST OF TABLES (if needed)

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**THE TITLE OF THE PAPER WILL BE 12 POINT, TIMES ROMAN BOLD FONT AND CENTERED AT THE TOP OF THE PAGE—ALL CAPS—SINGLE SPACING**

Student Name (four single spaced lines following the title)  
Expected date of graduation

**GENERAL STYLE POINTS** (primary headings will be bold and underlined)

Papers/theses are to be submitted in a single MS Word document. Papers will be written in 12 point, Times New Roman Font. The paper will be double-spaced throughout with the first line of each paragraph indented by 0.25 inches. The left margin will be 1.5 inches, and the others will be one-inch. All text will be left justified, and the paper will be single-sided. On the final page of the paper will provide contact information upon graduation.

**Footnotes and Endnotes** (secondary headings: bold sentence case)

You may use footnotes or end notes only to illuminate points in the paper. They are not to be used to reference the paper. See section on references. Do not mix end and footnotes.

**More Formatting Details**

All acronyms—even those authors might expect to be commonly understood—should be spelled out the first time they are used, with the acronym appearing in parentheses following the spelled-out title or term. For example, "The Central Intelligence Agency (CIA) has seen better days." Words in a language other than English should be italicized only when they cannot be found in a good standard English-language dictionary. Non-English words that are specific to a particular paper's subject should be italicized and

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briefly defined when they are first used. Thereafter, they do not need to be italicized.

Scientific names should be italicized and follow standard nomenclature with the genus name capitalized, the species name in lower case (i.e., *Escherichia coli*), and both names spelled out in full the first time they are used. Thereafter, the genus name should be abbreviated (i.e., *E. coli*).

*Headers and Footers* (tertiary headings italics – do not use more than three heading types)

Pages numbers will be centered in the bottom margin. Following this first page of the paper/thesis, you will include a running header with author name and a brief (shortened/simplified) title of the project.

*Numbers, Equations, etc*

All whole numbers from one to ten should be spelled out unless they are paired with a mathematical symbol (e.g.,  $2 + 2 = 4$ ), units (e.g., 5 mm, 6 cm), "percent" (e.g., 7%), or "score" (e.g., score of 4). Decimals appearing in tables and text should include leading zeros. For example, 0.1273 (rather than .1273). All numbers should be spelled out when occurring at the start of a sentence. In mathematics, numbers and parentheses should always be set roman. Common statistical variables (e.g.,  $n$ ,  $f$ ,  $R$ ,  $p$ ) should be set in italics. Equations should be offset from a paragraph and centered on the page. See example given below:

$$\Delta Q \sim Q (\pm \Delta\theta_b/\epsilon_b \pm 5/2 \Delta H_{sb}/H_{sb}) \quad (\text{Equation 1})$$

*Quotations*

All quotation marks should be double. The only exception to this is if material is quoted within a quote, in which case single quotes are used for the embedded quote.

Periods and commas should appear inside quotation marks. All other punctuation should appear outside quotation marks, unless the quotation marks delineate a direct quote and the placement of the punctuation would alter the meaning of the quote. Direct quotes that are 60 words or more in length should be set as single-spaced extracts/block quotes (i.e., separated from surrounding text by one line at beginning and one line at end, and indented 0.5" on either side). The quote will include the reference and page number. An example is given below:

“The arc of erosion caused by a stabilized tidal inlet is mobile and its spatial behavior is time dependent and expands at a non-linear rate. The initial arc of erosion is short with very high rates of erosion. As the arc of erosion expands, the erosion rates within the arc are attenuated, but the area of change remains constant. The final configuration of the arc of erosion is a characteristic “s” shape. The significance of this mode of shoreline behavior is in its temporal expansion and the relative magnitude of erosion along its length. With the passage of time, as the eroding front of the arc of erosion expands, more and more beach is adversely affected by inlet-induced erosion. The zero point may falsely indicate the termination of the arc of erosion because rates-of-change are attenuated and may even become slightly accretional for a period.” (Galgano 2009, 13).

Shorter quotes should be integrated into the text as shown, “Some circumstantial evidence is very strong, as when you find a trout in the milk” (Thoreau 1778, 21). Note that direct quotes are rarely, if ever, appropriate in scientific writing; but are common in the social sciences.

### **MAPS, IMAGES, AND TABLES**

Maps, images, and tables will be numbered consecutively as “Figures” (e.g., Figure 1, Figure 2, Table 1, etc.). All figures and tables should be mentioned explicitly and in numerical order in the text. Maps and images will **not** be embedded in the body of the paper. Instead, they will be placed sequentially at the end of the paper, following the

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references section. Each map or image will have a caption and indicate the source (see examples at the end of the style sheet). Tables will be constructed using the Word Table function. Do not make tables using tabs and spaces. Do not construct tables that exceed one page in length. Tables will follow the maps and images—see the example at the end of this style sheet. Authors are responsible for securing permission for material, or citing their origin. Please use public domain maps and images whenever possible.

## **REFERENCES**

Parenthetical citations should appear in date order and should follow this format with respect to punctuation: (Zuckerman 1972; Barrett 1989; McNaughton, Reese, and Barrett 1989; Turner 1992, 1993; Parnell 1997a, 1997b; Coleman 2000, 124–30). The references section will include only those publications cited in the text. Sources with up to two authors should be parenthetically cited every time using all author names; sources with more than two authors should be parenthetically cited every time using the first author name and “et al.” (“et al.” should not be italicized): Callifer et al. 1973. Note that all author names should be listed in the references section.

In references, authors should insert a space between an author’s first and second initials: e.g., R. M. Sartain. In the references section, three successive “em” dashes should be substituted for an author’s name (also for multiple authors) in second and subsequent citations to that author as single author of a source:

One Author:

Smythe-Jones, X. 1998. Copyediting: The authoritative tome. Cambridge, MA: Small Room Press.

———. 1999. Copyediting: Some things I forgot about last time. Cambridge, MA: Small Room Press.

Multiple Authors:

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Smythe-Jones, X., L. Emmetson, and Q. Garraty. 1995. The art of copyediting: Nitpicking never ends. *American Journal of Copyediting* 27:167–89.

———. 2000. Further picking of nits: Five years later. *American Journal of Copyediting* 32 (2): 101–57.

Personal communications should be cited in their entirety in the text of the paper rather than in the references section. For all personal communication citations, elements required include the following: name of person, position, and organization (if relevant), date of communication, method of communication (fax, e-mail, letter, conversation, etc.).

If authors cite in the text a source quoted in another source, they must provide full citations for both sources in the references section. Where possible, a page reference to the quote in the original source should also be provided.

Software packages referred to in the text of a paper must be cited in the references section. Information required includes only the following: name of software, version used, maker of software, city/state/country of location of maker.

The title of a Web site or page should not be italicized in the references section. (Note, however, that the title of a Web site should be provided; Web sites cannot be cited solely by URL.) The title of a paper posted on the Web directly by its authors should be italicized. The title of a paper published by an online journal or posted on the Web by a professional organization as part of the proceedings of a particular professional meeting should not be italicized, but the name of the journal or title of the proceedings should be italicized, following the format appropriate to citation of a journal article or a chapter from an edited work.

Web site URLs should be cited at the end of a citation to an online source in this format: [http://www.house.gov/science/asrar\\_021199.htm](http://www.house.gov/science/asrar_021199.htm) (last accessed 26 February 2001). The last accessed date is required information for a citation.



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**REFERENCES CITED** (the last section of each paper will be called 'References Cited.')

Sample references are given below:

Abate, T. 1994. Climate and the collapse of civilization. *Bio Science* 44 (8): 516-519.

Butts, K. H. 1994. *Environmental security: A DoD partnership for peace*. Strategic Studies Institute Special Report, Carlisle: U.S. Army War College Press.

Department of Defense (DoD), 2005. *The national defense strategy of The United States of America*. Washington, D.C.: U.S. Government Printing Office.

Gleditsch, N. P., R. Nordås, and I. Salehyan. 2007. *Climate change and conflict: The migration link*. Coping with Crisis Working Paper Series. International Peace Academy. <http://www.ipacademy.org>. (last accessed: 31 August 2008).

Homer-Dixon, T. F. 1999. *Environmental scarcity and violence*. Princeton: Princeton University Press.

Melvern, L. 1999. The record of killing by machete was 1,000 every 20 minutes. *The Times (London)* 4 March: 15.

Mitchell, T. 1997. *Rwanda and conflict*. International Conflict and the Environment: Rwanda Case, Case No. 23, Trade and Environment Database. <http://www.american.edu/ted/ice/Rwanda.htm> (last accessed: 3 September 2008)

National Security Council (NSC), 1991. *National security strategy of the United States*. Washington, D.C.: U.S. Government Printing Office.

Newbury, C. 1995. Background to genocide: Rwanda. *Issue: A Journal of Opinion* 23 (2): 12-17.

Renner, M. 2002. The anatomy of resource wars, Worldwatch Paper 162. In *State of the World Library*, ed. Thomas Prough, Danvers: Worldwatch Institute.

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Swartz, P., and D. Randall. 2003. An abrupt climate change scenario and its implications for United States national security. *Global Business Network*.

<http://www.bbn.com/ArticleDisplayServlet.srv?aid=26231>. (last accessed: 28 August 2008).

United National Environment Program (UNEP), 2007. *Sudan post-conflict environmental assessment*. New York: United National Environment Program.



Figure 1. China's maritime area of interest (Department of Defense 2009).

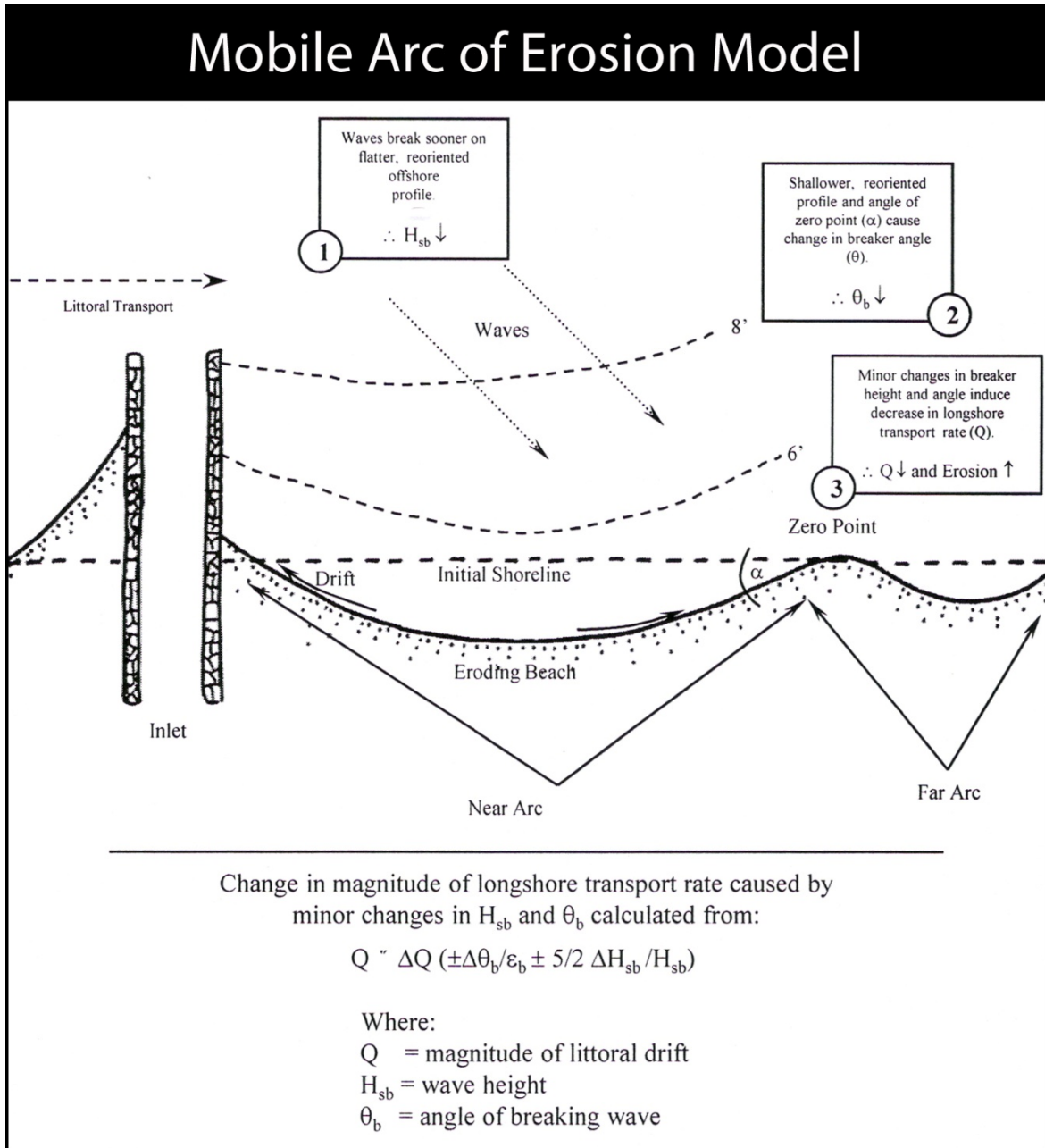


Figure 2. Proposed model for the double “s” arc of erosion configuration modified from Bruun (1996). The short distance arc is a geomorphic feature caused by the shadow effect of the jetty. Wave refraction causes accretion against the jetty. The long distance arc is generated by a sediment deficit. The shore profile along the downdrift beach is flatter and reoriented (Dean, 1996). The changed profile brings about subtle changes in breaker height ( $H_{sb}$ ) and breaker angle ( $\theta_b$ ) that strike the zero point at a reduced angle. Minor changes in breaker height and angle induce a decrease in the longshore sediment transport volume beyond the zero point. This initiates the eroding front and development of the long distance arc. The zero point can theoretically continue to move and cause the arc of erosion to expand downdrift infinitely (Dean, 1996).

Table 1. Level of governance 1996 – 2002 and key environmental indicators

State (Rank)	Governance index <sup>1</sup>	Human development index <sup>2</sup>	Percent of land under agriculture	Annual freshwater withdrawals, % of resources
Somalia (198)	-1.99	--	70.50	54.83
Congo Dem Rep (197)	-1.94	0.41	--	--
Iraq (196) <sup>3</sup>	-1.76	--	22.91	121.31
Afghanistan (195) <sup>4</sup>	-1.74	--	58.34	42.29
Liberia (194)	-1.74	0.80	26.99	711.33
Burundi (193)	-1.65	0.41	91.16	2.85
Haiti (192)	-1.55	0.53	57.69	0.90
Rwanda (191)	-1.48	0.45	45.00	1.58
Sudan (190)	-1.47	0.53	56.32	124.40
Angola (189)	-1.44	0.45	46.03	0.24
Congo (188)	-1.44	0.55	--	--
Myanmar (187)	-1.43	0.58	16.61	4.84
Sierra Leone (186)	-1.42	0.34	39.10	0.24
Central African Rep (185)	-1.39	0.38	8.26	0.02
Ivory Coast (184)	-1.38	0.43	--	--
United States (15)	1.54	0.95	45.41	17.12
United Kingdom (14)	1.55	0.95	--	6.58
Australia (13)	1.62	0.96	58.19	4.86
Austria (12)	1.66	0.95	40.92	3.84
Liechtenstein (11)	1.66	--	43.75	--
Sweden (10)	1.73	0.96	7.73	1.73
Denmark (9)	1.74	0.95	62.90	21.17
New Zealand (8)	1.74	0.94	64.38	0.65
Singapore (7)	1.76	0.92	1.78	--
Norway (6)	1.77	0.97	3.44	0.57
Netherlands (5)	1.78	0.95	13.57	72.18
Iceland (4)	1.84	0.96	22.75	0.12
Finland (3)	1.88	0.95	7.34	2.31
Luxembourg (2)	1.89	0.94	49.42	--
Switzerland (1)	1.97	0.96	38.13	6.36

<sup>1</sup> Aggregate governance index derived from Kaufmann, Kraay, and Mastruzzi (2003). This index was developed by an examination of six metrics (i.e., voice and accountability of the government; political stability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption) during four periods between 1996 – 2002. A more negative score indicates weaker governance.

<sup>2</sup> Human development index provides a composite measure of three dimensions of human development: life expectancy, adult literacy, and standard of living. See <http://hdr.undp.org/en/>.

<sup>3</sup> Iraq governance data was recorded before the 2003 U.S. led invasion.

<sup>4</sup> Afghanistan governance data not recorded for 2002, after Taliban was ousted from power.

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