GEOG 206: Human Dimensions of Natural Hazards  
(Winter 2013)  
Department of Geography, University of Waterloo

Instructor:  Brent Doberstein  
Office: EV1-220  E-mail: bdoberst@uwaterloo.ca  
Class Hours:  T Th 11:30-12:50pm  
Classroom:  STP 105  
Office Hours:  W 10:00am – 12:00 noon (or by appointment)

COURSE DESCRIPTION

Calendar Description
This course will investigate the human dimensions of the global experience with natural hazards and associated disasters. The physical nature of a wide range of geophysical and biophysical hazards will be explored, paying particular attention to: the ways in which hazards become dangerous to humans, and the pathways by which humans can either increase or decrease their vulnerability in the face of natural hazards.

Overview
Natural hazards and associated disasters are, in part, a product of inappropriate human modifications or management of the natural landscape. In a decade in which the human dimensions of natural hazards are becoming increasingly recognized, (e.g. the 2005 Hurricane Katrina damages have been linked strongly to inadequate human settlement planning, Haiti’s 2010 earthquake saw heavy casualties due in large part to poor building standards, and the 2011 Japan earthquake/tsunami damages have been linked to inadequate coastal zone planning), it is appropriate that this course focus on the ways in which humans increase or decrease the risks posed by natural hazards.

This course investigates the human dimensions of the global experience with natural hazards and associated disasters. The physical nature of a wide range of geophysical and biophysical hazards are first explored, paying particular attention to: the ways in which hazards become dangerous to humans, and the pathways by which humans can either increase or decrease their vulnerability in the face of natural hazards. The course will then examine how humans adjust to the presence of hazard and disaster, with a particular concentration on disaster preparedness, disaster risk reduction and hazard mitigation. Throughout the course, case studies and examples drawn from countries and regions around the world will be used to clarify conceptual and methodological issues. Through assignments and in-class participation, students are encouraged to explore hazards and world regions of personal interest.

Course Objectives:
1. Provide a conceptual & methodological framework for the examination of natural hazards  
2. Explore human dimensions of natural hazards, disasters & mitigation  
3. Clarify the relative risks posed by different types of natural hazard  
4. Explore newly-emerging trends in natural hazards knowledge, planning & mitigation  
5. Illuminate & contrast natural hazards & hazards mitigation theory with real-world case studies & applied mitigation planning exercises.
Texts:
   Where to buy: UW Bookstore (South Campus Hall): Soft cover copy

Course Evaluation
Your final mark will be determined on the basis of 3 tests + 1 assignment. There is no final exam.
1. Test #1 (25%): Jan. 31st – short answer format
2. Test #2 (25%): Mar. 5th – short answer format
3. Assignment #1: Mar. 28th (Team NGO evaluation report)
4. Test #2 (25%): Apr. 8th – M/C format

Grading
Numeric grades on a scale from 0-100 are used in grading all tests and assignments at the University of Waterloo. The following list will give you an idea of the basis upon which numeric grades are assigned:

<table>
<thead>
<tr>
<th>Grade Range</th>
<th>Description</th>
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<tbody>
<tr>
<td>90-100%</td>
<td>Work that shows a high level of initiative and is clearly above and beyond what is expected at a second year level. Referencing, style, grammar/spelling, content and the development of ideas are all superior.</td>
</tr>
<tr>
<td>80-89%</td>
<td>Work that shows good initiative and is above what is expected at a second year level. Referencing, style, grammar/spelling, content and the development of ideas are all good.</td>
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<tr>
<td>70-79%</td>
<td>Work that shows initiative and is about what is expected at a second year level, but one or more problems are evident in referencing, style, grammar/spelling, content and/or the development of ideas.</td>
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<tr>
<td>60-69%</td>
<td>Work that does not demonstrate initiative, has a series of problems in referencing, style, grammar/spelling, content and/or the development of ideas, and overall, does not fully convince the reader that the topic has been well considered</td>
</tr>
<tr>
<td>50-59%</td>
<td>Work that is substandard/sloppy in places, has many problems in referencing, style, grammar/spelling, content and/or the development of ideas, and overall, raises more questions in a reader’s mind than the work answers.</td>
</tr>
<tr>
<td>40-49%</td>
<td>Work that is of consistently poor quality, demonstrates gaps in comprehension of the assigned material, and/or indicates that not enough time was taken to properly address the assignment</td>
</tr>
<tr>
<td>&lt;40</td>
<td>Work that is clearly of poor quality, demonstrates a lack of comprehension of the assigned material, shows little attempts at a personal development of ideas or efforts to back up arguments with suitable evidence, and/or indicates that the work was completed ‘at the last minute’. Possibly contains plagiarized material.</td>
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</tbody>
</table>
Assignment: Team-based NGO Evaluation Report

SUMMARY: Research report evaluating the hazards/disasters-related work of an NGO

Length: 3000 – 3500 words 1 ½ spaced 12 font (excluding maps, figures, tables and bibliography). This assignment requires you to form a small “team” (2-3 members) which will evaluate the work of an NGO (“non-governmental organization”) dealing with hazards and disasters. Such work may include: humanitarian responses (e.g. immediate disaster relief such as rescue/emergency housing/food/water or longer-term reconstruction), disaster risk reduction, hazard awareness, community-based disaster management, disaster vulnerability reduction, disaster preparedness, disaster policy & advocacy, etc.

Include in your paper:

1. Introduction and overview of paper (5%):
   - including overall ‘thesis/main argument’ you will make in your paper
   - include a brief overview/’road map’ for the reader (“this report will _____, ___, ____”).

2. Orientation to your NGO (10%):
   - what they do in general - a broad summary/overview of the work this NGO does
   - annual budget
   - sources of funding? (e.g. individual donations, CIDA grants, corporate donations, private foundation, etc.)

3. Summary of Hazards and Disasters related work the NGO does (25%):
   Outline the entire range of hazards/disasters-related work this NGO does. For example:
   - Does the NGO ONLY get involved in humanitarian/reconstruction relief (e.g. Asian tsunami 2004, Haiti 2010)?
   - Does the NGO do longer-term DRR work (hazard awareness, community-based disaster management, disaster vulnerability reduction, disaster preparedness, education)
   - Does the NGO do general development work which contributes to DRR (e.g. livelihoods enhancement, poverty reduction, environmental restoration, small business development, etc).

4. Specific example(s) of hazards/disasters projects or campaigns the NGO has been involved in: (25%). This may include, but is not limited to:
   - work on specific disasters or ‘campaigns’
   - concentrations on particular countries
   - sub-contracting work on larger projects or campaigns

5. Skills needed to work for this organization (10%):
   - based on your research, outline the skills that your group thinks they would need before being hired by this NGO to carry out their hazards and disasters-related work (NOTE: this section does NOT require citations, although you might refer back to information mentioned earlier. This section can also be done in table or bullet form as long as you have a brief discussion which connects to the information).

6. Conclusion (5%): based on your assessment of this NGO, how important is the organization’s work, and what further opportunities exist for this organization regarding hazards and disasters.

7. Bibliography (5%): Provide a bibliographic list of all sources of information you use. Use a minimum of 10 sources & try to include at least TWO non web-based sources (e.g. book, journal article, published report, personal communication, etc).

8. Style (15%): Citations, sentence construction, grammar, logic, graphics, professionalism and overall appearance of paper, appropriate length
COURSE AND UNIVERSITY POLICIES

Attendance
Attendance in class is at your discretion. However, there is often extra content in the notes displayed in class vs. the notes posted on the course webpage (E.g. discussion points or questions asked of the class, graphics-heavy images such as maps or diagrams), and all in-class discussions are valid “testable” materials. Also, all A/V materials (e.g. DVDs screened in class) are valid, “testable” materials, so complete notes should be taken for each DVD screened. For these reasons, attendance at each lecture is HIGHLY RECOMMENDED.

Missed Test:
All tests are mandatory, and thus, every effort should be made to attend each test. The only exceptions to this are those students who have a valid medical reason, personal or family emergency, etc:

1. Valid medical reason such as illness or accident (appropriate proof such as a Doctor’s note is required);
2. Personal or family emergency, death in the family, etc (with suitable proof where possible);
3. Other valid reasons beyond the control of the student (to be approved on a case-by-case basis at the discretion of the instructor). If you know in advance that you will not be able to make a test, please contact the instructor as far in advance as possible to discuss alternatives.

If you miss a test for any reason:
1) Communicate to the instructor the reason you missed the quiz.
2) IMPORTANT! As soon as possible, please obtain a valid medical, counselor’s or other ‘proof of absence’ note explaining the reason for your absence, degree of incapacitation, dates covered by the note, etc. Please make a copy of this note and give the copy to your instructor by hand or scanned and sent by email (email to bdoberst@uwaterloo.ca).

If you miss a test but do NOT have a doctor’s/counselor’s note or other valid explanation for your absence: Explain the reason for your absence to the instructor (ideally during a help session or by email). The instructor will determine on a case-by-case basis whether an alternative arrangement can be made, or whether to assign a ‘zero’ on the test.

Note for students with disabilities:
The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.

Religious Observances:
Please inform the instructor at the beginning of term if special accommodation needs to be made for religious observances that are not otherwise accounted for in the scheduling of classes and tests.

Academic Integrity:
In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. www.uwaterloo.ca/academicintegrity/. Students who are unsure what constitutes an academic offence are requested to visit the on-line tutorial at: http://www.lib.uwaterloo.ca/ait/
Discipline:
A student is expected to know what constitutes academic integrity, to avoid committing academic offence, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline, www.adm.uwaterloo.ca/infosec/Policies/policy71.htm. For typical penalties, check Guidelines for Assessment of Penalties www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm

Grievance:
A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - Student Petitions and Grievances, Section 4, www.adm.uwaterloo.ca/infosec/Policies/policy70.htm. When in doubt please contact your Undergraduate Advisor for details.

Appeals:
A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 – (Student Discipline) may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72 (Student Appeals) www.adm.uwaterloo.ca/infosec/Policies/policy72.htm

Consequences of Academic Offences:
ENV students are strongly encouraged to review the material provided by the university’s Academic Integrity office (see: http://uwaterloo.ca/academicintegrity/Students/index.html).

University Policies: Plagiarism
Please familiarize yourself with the University of Waterloo’s policy dealing with plagiarism. Be especially careful when using materials obtained from the internet, and be aware that software available to instructors can be used to check student submissions for plagiarism (e.g. www.Turnitin.com). Plagiarism offices are normally treated quite seriously by the University and can result in significant penalties being assessed (e.g. failing grade on an assignment, repeating a course, suspension or expulsion).

Definition of Plagiarism
“The act of presenting the ideas, words or other intellectual property of another as one's own.”
- Source: University of Waterloo, Policy 71.

To Avoid Plagiarism
The use of other people's work must be properly acknowledged and referenced in all written material such as take-home examinations, essays, laboratory reports, work-term reports, design projects, statistical data, computer programs and research results. The properly acknowledged use of sources is an accepted and important part of scholarship. Use of such material without complete and unambiguous acknowledgement, however, is an offence under policy 71.

Turnitin:
Plagiarism detection software (Turnitin) will be used to screen the assignment in this course. This is being done to verify that use of all materials and sources in assignments is documented. Students will be given an option if they do not want to have their assignment screened by Turnitin. In the first week of the term,
details will be provided about arrangements and alternatives for the use of Turnitin in this course. NOTE: any student not wishing to submit materials for Turnitin detection must contact the instructor by February 1st to arrange for an alternative assignment.

**Group Work**
Tests are to be completed individually. No group work or collaboration is allowed on any of the tests. The Assignment is a group project, and so collaboration is both allowed and expected. Please note that all team members are collectively responsible for ensuring that all materials are cited properly.

**Unclaimed Assignments**
Unclaimed assignments will be retained until one month after term grades become official in quest. After that time, they will be destroyed in compliance with UW’s confidential shredding procedures.

**Research Ethics:**
Please also note that the ‘University of Waterloo requires all research conducted by its students, staff, and faculty which involves humans as participants to undergo prior ethics review and clearance through the Director, Office of Human Research and Animal Care (Office). The ethics review and clearance processes are intended to ensure that projects comply with the Office’s Guidelines for Research with Human Participants (Guidelines) as well as those of provincial and federal agencies, and that the safety, rights and welfare of participants are adequately protected. The Guidelines inform researchers about ethical issues and procedures which are of concern when conducting research with humans (e.g. confidentiality, risks and benefits, informed consent process, etc.).

If the development of your research proposal consists of research that involves humans as participants, please contact the course instructor for guidance and see: [http://iris.uwaterloo.ca/ethics/](http://iris.uwaterloo.ca/ethics/)

*(NOTE: this statement is required on all course outlines, but it is not expected that this will apply to any student in Geog 206 since original research with human subjects, animals, etc. will not be part of course expectations).*

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**Course Notes: Information for Students Using Desire to Learn (course webpage for Geog 206)**

Desire to Learn or D2L is a web-based course management system that enables instructors to manage course materials (posting of lecture notes etc.), interact with their students (drop boxes for student submissions, on-line quizzes, discussion boards, course e-mail etc.), and provide feedback (grades, assignment comments etc.). The degree to which D2L is utilized in a particular course is left to the discretion of the instructor and therefore, you may find a large variance in how D2L is being used from course to another.

**Logging Into D2L**
Users can login to LEARN via: [http://learn.uwaterloo.ca/](http://learn.uwaterloo.ca/) (using your WatIAM/Quest username and password)

**Checking Your Userid and Password**
Your password can be checked by going to: [https://watiam.uwaterloo.ca/idm/user/login.jsp](https://watiam.uwaterloo.ca/idm/user/login.jsp)

If you still can not get on after checking your password, please confirm with your instructor that you are on the class roster. Only students with courses using D2L will have access to the site.

**Getting Help**
A D2L student guide can be found at: [http://av.uwaterloo.ca/uwace/training_documentation/student_index.html](http://av.uwaterloo.ca/uwace/training_documentation/student_index.html)
Lecture Schedule
(Note: dates & topics covered are approximate and are subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics Covered</th>
<th>READINGS</th>
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<tbody>
<tr>
<td>WEEK 1</td>
<td>INTRODUCTION</td>
<td>Abramovitz (p.1-28) Ch. 1</td>
</tr>
<tr>
<td>(Jan 8, 10)</td>
<td>-Introduction &amp; course overview</td>
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<td></td>
<td>-Definitions, hazard/risk/disaster, hazard research</td>
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<td></td>
<td>-Hazard typology</td>
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<td>-Paradigms of hazard (incl. “Unnatural Hazard”)</td>
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<tr>
<td>WEEK 2</td>
<td>CONTEXT: HAZARDS &amp; DISASTER RISK REDUCTION</td>
<td>Ch. 2 Ch. 5</td>
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<tr>
<td>(Jan 15, 17)</td>
<td>-From Hazard to Disaster</td>
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<td></td>
<td>-“Pressure and Release” (PAR) model</td>
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<td></td>
<td>-The range of adjustments (bearing, sharing &amp; reducing exposure)</td>
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<td></td>
<td>-Modifying human vulnerability</td>
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<tr>
<td>WEEK 3</td>
<td>THE PHYSICAL NATURE OF TECTONIC HAZARDS:</td>
<td>Ch. 6</td>
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<tr>
<td>(Jan 22, 24)</td>
<td>-Earthquakes &amp; tsunamis</td>
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<td></td>
<td>-Video: tsunami</td>
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<tr>
<td>WEEK 4</td>
<td>THE PHYSICAL NATURE OF TECTONIC HAZARDS: (continued)</td>
<td>Ch. 6</td>
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<tr>
<td>(Jan 29, 31)</td>
<td>-Tsunami (continued)</td>
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<tr>
<td></td>
<td><strong>Test #1 (Jan. 31) short answer format</strong></td>
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<tr>
<td>WEEK 5</td>
<td>THE PHYSICAL NATURE OF SEVERE STORM HAZARDS</td>
<td>Ch. 9</td>
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<tr>
<td>(Feb. 5, 7)</td>
<td>-Cyclonic &amp; winter storms</td>
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<td></td>
<td>-Video: hurricane</td>
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<tr>
<td>WEEK 6</td>
<td>THE PHYSICAL NATURE OF SEVERE STORM HAZARDS (continued)</td>
<td>Ch. 10 (p. 268-272)</td>
</tr>
<tr>
<td>(Feb 12, 14)</td>
<td>-Extreme Weather</td>
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<tr>
<td></td>
<td>THE PHYSICAL NATURE OF TECTONIC HAZARDS (CONTINUED)</td>
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<td></td>
<td>-Volcanoes</td>
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<tr>
<td>WEEK 7 READING WEEK</td>
<td><strong>Reading Week (Feb. 18-26\textsuperscript{th})</strong></td>
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<td><strong>No Classes</strong></td>
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<td>WEEK 8</td>
<td>THE PHYSICAL NATURE OF MASS MOVEMENT HAZARDS</td>
<td>Ch. 8</td>
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<tr>
<td>(Feb 26, 28)</td>
<td>-Mass Movement Hazards (Landslides, Avalanches, Erosion)</td>
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<tr>
<td></td>
<td>THE PHYSICAL NATURE OF BIOPHYSICAL HAZARDS</td>
<td>Ch. 10 (p.273-294)</td>
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<tr>
<td></td>
<td>-Biophysical Hazards (Disease, extreme temperatures &amp; Wildfire)</td>
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<tr>
<td>WEEK 9</td>
<td><strong>Test #2 (Mar 5) short answer format</strong></td>
<td>Ch. 11</td>
</tr>
<tr>
<td>(Mar 5, 7)</td>
<td>-Hydrological hazards (Floods)</td>
<td></td>
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<tr>
<td>WEEK 10</td>
<td>-Video: flooding</td>
<td>Ch. 12</td>
</tr>
<tr>
<td>(Mar 12, 14)</td>
<td>-Hydrological hazards (Drought)</td>
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<td></td>
<td>-Video: drought</td>
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<td>WEEK 11</td>
<td><strong>Mar. 19: NGO Guest Speakers TBA</strong></td>
<td>Ch. 2 (review p.42-45)</td>
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<tr>
<td>(Mar 19, 21)</td>
<td>BEFORE &amp; AFTER DISASTER</td>
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<td></td>
<td>-After a disaster: the cycle of response</td>
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<td>Video: post-disaster</td>
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<tr>
<td>WEEK 12</td>
<td><strong>Mar. 26: Class cancelled due to UW Religious observance policy</strong></td>
<td>Ch. 12</td>
</tr>
<tr>
<td>(Mar 26, 28)</td>
<td>-Disaster risk reduction (IDNDR &amp; ISDR)</td>
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<tr>
<td></td>
<td><strong>Assignment due: Mar. 28</strong></td>
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<tr>
<td>WEEK 13</td>
<td>-Complex &amp; Unnatural hazards, climate change &amp; hazards connections</td>
<td>Abramovitz (p.1-28 review) Ch. 14</td>
</tr>
<tr>
<td>(Apr. 2, 4)</td>
<td><strong>Test #3 (Apr. 4) MC format</strong></td>
<td></td>
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</tbody>
</table>
Useful Hazard & Disaster links
Realtime Disaster Monitoring & Event Reporting:
http://www.reliefweb.int/rw/dbc.nsf/doc100?OpenForm
http://earthobservatory.nasa.gov/NaturalHazards/
http://www.emdat.be/
http://www.emdat.be/disaster-week
http://www.usgs.gov/hazards/
http://earthquake.usgs.gov/eqcenter/recenteqlww/
http://www.disastercenter.com

Hazards/Disasters Journals (NOTE: must be connected as a UW user for free access)
Disasters http://www.blackwellpublishing.com/journal.asp?ref=0361-3666&site=1
Disaster Management and Response www.sciencedirect.com/science/journal/15402487
Disaster Prevention & Management
http://www.emeraldinsight.com/Insight/viewContainer.do?containerType=Journal&containerId=10806
Environmental Hazards http://elsevier.net/wps/find/journaldescription.cws_home/706537/description
Natural Hazards http://www.springerlink.com/content/0921-030X
Natural Hazards and Earth Systems Sciences
http://www.nat-hazards-earth-syst-sci.net/volumes_and_issues.html
Natural Hazards Observer http://www.colorado.edu/hazards/o/
Natural Hazards Review http://scitation.aip.org/nho
Global Environmental Change
http://www.elsevier.com/wps/find/journaldescription.cws_home/30425/description#description

Hazards Research Centres
http://www.colorado.edu/hazards/
http://www.benfieldhrc.org/
http://www.cas.sc.edu/geog/hrl/
http://www.aoml.noaa.gov/hrd/
http://www.ihc.fiu.edu/

Latin America/Caribbean
http://www.disaster-info.net/socios_eng.htm
http://www.cdema.org/
http://www.eird.org/index-eng.htm

Asia/Pacific
http://www.adpc.net/
http://www.pdc.org/iweb/pdchome.html
http://www.unisdr.org/asiapacific/asiapacific-index.htm
http://www.adrc.or.jp/top.php

Africa
http://www.unisdr.org/africa/africa-index.htm
Canada

USA
http://www.fema.gov/
http://www.bt.cdc.gov/disasters/

Hazard Mitigation & Disaster Reduction
http://www.fema.gov/plan/mitplanning/index.shtm
http://www.unisdr.org/
http://www.ibhs.org/
http://www.iclr.org/
http://www.gdrc.org/uem/disasters/disenvi/index.html

Other links
http://www.disasterlinks.net/
http://www.intute.ac.uk/sciences/hazards/

Disaster simulation games
http://www.stopdisastersgame.org/en/
http://insidedisaster.com/haiti/experience