

## Big Fires Case Study Project

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All of the elements we are learning about – fire physics, chemistry, behavior, ecology, management, policy – are integrated in any large event. The purpose of the case study is to learn how these factors interact to create the complex events we call “wildfires”. The “Big Fire” case study will be your main creative research project for the term. You are doing this *in lieu* of a conventional term paper.

**Selecting an event.** You will be directed to one or more web sites where you can find lists of significant fires in the past 100 years to choose from. We focus on these major events because they are more likely to have information readily available compared to smaller, more local events. However, if you wish to work on a fire that is not on the list, please consult the instructor or TA. The fire can be from anywhere in the world, although you will probably find the best information from the US, Canada, and Australia – but look at any areas of the world that you are interested in. Only one person or group may work on any given event.

This year there were several major fires in south central and southwestern North America, including Arizona, New Mexico, Texas, and northern Mexico. I would encourage projects on these fires, especially if a group wanted to take on the Mexico fires which have received relatively little attention.

**Sources of information.** We will provide you with a starting list of websites that you can consult to find information about your event. However, we encourage you to search beyond these; for example, there may be publications listed on the Forest Service “**treesearch**” web site (<http://www.treesearch.fs.fed.us/>) for forest publications. For relatively recent US events the “**InciWeb**” site (<http://www.inciweb.org/>) is a good place to start. You can get fire severity maps from the Monitoring Trends in Burn Severity (**MTBS**) web site (<http://mtbs.gov/>). For a longer history of fires, the National Interagency Fire Center (**NIFC**) is an excellent starting point (<http://www.nifc.gov/>).

**Template.** Please use the following template of information. To prepare your final report, you fill in as many fields of information as possible with as much information as you can find about:

1. Name of event
2. Location
3. Land ownership (Federal or State agencies, private lands, etc)
4. Date of ignition
5. Date of containment
6. Total duration (days; please include a progression map if you can locate one, from InciWEB or other sources)
7. Total final perimeter (ha)
8. Cause of ignition
9. Weather at the time of ignition
10. Weather changes during progression of the fire (this will probably be very important to understanding why this became a large event)
11. What fuel types ignited initially?
12. What fuel types burned during the rest of the event (preferably as percentages of total fire area)

13. Consult FEIS for information about dominant species that may have been affected
14. Types of fire behavior observed (surface fire, torching, crowning, passive or active canopy fire, plumes)
15. Overview of fire effects, such as burned area assessments and maps (please include a burn severity map if you can find one from MTBS or other sources)
16. What suppression efforts were undertaken? What effect did they have on fire behavior?
17. Total suppression costs
18. Injuries, fatalities of firefighters or others
19. Influence of homes or other development in decisions about how incident was managed
20. Other observations

We understand that some kinds of information may not be available for some events, especially those that happened prior to the 1980s. However, this should not deter you from choosing an older event if it is interesting to you.

**Graphics.** In addition to filling in this template, please try to obtain several **photographs** of the event, as well as a **progression map** and a **burn severity assessment** map. These are part of the report you submit electronically, and also part of your presentation to the class.

**Group or individual work.** You may conduct your case study individually, in pairs, or groups of three. No larger groups, please. For pairs or threesomes you must submit a statement signed by everyone that all group members contributed equally to the effort in the project, and everyone needs to make an equal share of the final presentation.

**Submitting your report.** Please submit your report in electronic form along with a hard copy. Electronic formats can include PowerPoint or Adobe presentations or other formats. Please submit your final report on CD, flash drive, or other electronic medium to the instructor or TA.

**Schedule.** To keep things moving along, we have set up the following schedule for your projects:

1. **Friday 14 October:** Project assignment distributed and discussed in class.
2. **Friday 28 October: Submit a list in class of three (3) fire events** listed in order of preference; please provide the name of each fire, its general location, and the year it occurred. We will choose lists in random order until everyone has a fire assigned. These will be returned to you early the following week. This list is worth 10 points if turned in on time.
3. **Friday 18 November: Progress report due in class.** Summarize what you have found so far, filling in at least some of the template; you can also mention any difficulties you have encountered. This should be at least one page, turned in at the end of class. The progress report is worth another 15 points if turned in on time.
4. **Friday 2 December: Final projects due in class:** this includes the hard copy final report and electronic submission, earning another 30 points. You must give us an electronic copy at this time so we can set up

presentations for the following week. Submitting these materials earns 25 points, bringing your total to 50 points just for getting the work done.

5. **Monday and Wednesday 5 and 7 December: Brief (10 minute) in-class presentations** based on your PowerPoint/Adobe slide shows. If we do not have time for all the presentations, we may ask one or two presenters to go on Friday December 2. When you present, please be prepared to answer questions from the class and instructors about your event. The evaluation of your final report and presentation is scored for the remaining 50 possible points.

**Project supervision:** Tyson Swetnam (TA) will be your main contact point for questions and advice.

**Grading:** The project is worth a total of 100 points, of which 50 are earned in the process of developing your case study, and the remaining 50 based on evaluation of your product, including thoroughness in finding information for the template, clarity of expression, graphical support (maps, photos, etc.), and overall coherence of presentation indicating an understanding of the event you have studied.

**Good luck, and have fun!**