Fire: Text/Outline

1. Awareness of local/regional management activity, especially in WUI communities

Goals: Communication between homeowners and their local officials, as well as communication between local officials and federal agencies.

- education of the homeowner

1.A. Taking heed from the devastating consequences of FY2000 and FY2002, most municipal leaders have begun to expand the spectrum of their fire fighting capacity. Recent success stories have proven that the most effective way to manage fuel hazards at the WUI is through cooperation not only of different levels of management (regional, local, federal), but also through different kinds of fire management (planning, building, etc). An example can be made of Emigration Canyon, Utah. Residents and homeowner associations there have formed a Fire Committee which includes also representatives from country, city, state and federal fire agencies, as well as the township planning board, the local weather board, the local water board, and the county planning office. Guided by a strategic planner, the committee, after a daylong planning session, created a Firewise Plan that was celebrated on the town’s first Fire Day, June 22, 2002. Fire Day showcased fire personnel from the federal down to the city levels, all of whom explained the broad range of their equipment and answered questions concerning the Emigration Canyon wildfire problem. Goals for the future of the Emigration Canyon Fire Committee focus on supporting Fire Day, participating in specific fuel-reduction activities, and purchasing GIS materials and consultants. More examples of community action include communities like Genesee, CO that use WUI federal grants to clear evacuation routes of hiking trails in the event of fire.

(cite: WUI roundtable 2)

1.B. While community-based efforts have proven very successful, perhaps the most important work in reducing fuel hazards at the WUI can only be done inside and around the home. Homeowners at the WUI have a plethora of resources available at their fingertips, all of which can go an extremely long way to improve domestic fire safety. The web is an invaluable resource. Websites like www.firewise.com contain around-the-house fire-safety checklists as well as a manual for those who are thinking about moving to a WUI community. Firewise even includes a home-rating scale that allows you to check your work when it is done. The scale measures everything from ventilation system, to the location of stacked firewood, to the home’s proximity to native vegetation. Beyond the web, most WUI communities will sponsor, upon request, a fire-safety specialist to visit the home and make sure that all fuel-reduction prep work has been done adequately and correctly.

(cite: firewise home fire protection checklist)
1.C. Despite fuel-mitigation efforts, the most effective way to increase fire safety at the WUI is by increasing understanding between homeowners and fire fighters in WUI communities. The increasing amount of public land that is becoming private property presents two major threats to WUI fire fighters.

1. When private property takes up public lands, it encroaches the landscape of native vegetation: “the proximity of a structure of native vegetation is a direct measure of the probability of its destruction sooner or later”. (cite: moving to the country) Not to mention, house’s improperly managed (houses with little or no ‘defensible space’) become enormous fuel loads, increasing both the force and vulnerability of a fire should it occur in that area.

2. Private property breaks public lands into un-even fragments. Improperly managed houses not only present frightening fuel loads, they do so in un-ordered fragments, making the fire-prediction element of fire fighting nearly impossible. Winds are shifted due to structural locations in a milieu of different directions, leading to fires that could be as bad as the 1991 Oakland Hills Fire that destroyed 790 homes in its first hour alive.

(cite:moving to the country)

-education of the municipal leader

1.A. to effectively solve the WUI fire problem awareness needs to be raised not only on the part of the homeowner, but also on that of the municipal leader. The Firewise group, again, is in invaluable resource for leaders that the municipal level, as it serves to integrate city/town fire management efforts with those of the state and nation. Towns that choose to become part of the “Firewise Communities/USA” are linked with federal, state and regional planners from all sides of the fire issue to come up with a fire strategy that best suits the community. Firewse communities have 5 basic obligations: to enlist a WUI specialist to complete a community assessment and create a plan based on consensus solutions, to sponsor a local Firewise Task Force Committee which monitors and evaluates the programs success, to observe a Firewise Communities/USA Fire Day each Spring to celebrate/educate the community about recent successes, to invest a minimum $2.00 per capita annually in local Firewise projects, and to submit an annual report to Firewise Communities/USA documenting compliance with the program. Early in the year Firewise Communities/USA holds regional training sessions, and in the Spring applications are accepted for the recognition program which showcases more impressive success stories. Community leaders are also advised to work closely with building and planning groups to make sure that new structures are both built in fire-safe areas and are built with fire-safe materials. A checklist for this can also be found at firewise.com.

(cite: WUI roundtable 2, firewise construction checklist)

1.B. Municipal leaders con fight the WUI fire problem by communicating more directly with WUI homeowners. Firewise communities have local Fire Days that allow
homeowners to learn more about local fuel mitigation and awareness projects. Fire Council’s Fire Days have inspired hundreds of homes in communities like Timberridge, AZ where over 150 homes had signed up for inspections after 10 months of Firewise Communities/USA participation. Community leaders are also advised to use the media, press releases and TV to educate homeowners of the benefits of becoming involved in fuel-reduction efforts. These ceremonies or media events should not only provide homeowners with fire-safety facts, but should also increase their awareness of the management systems in place to insure greater fire safety. Homeowners should be aware of efforts like that of the National Fire Plan’s to map the WUI expansion to the year 2030, in order to understand how their home fits in the future of their community’s fire-safety plans. The goal of communication with the homeowner should be the same as the goal of communication with regional/federal leaders: “to speak with one voice”, or, for everyone in the community to have a clear and reasonable goal for current and future fire-safety efforts.

(cite: NFP PNWest)

1.C. To effectively increase fire safety, community leaders should also be attuned to the management systems that govern their local fire departments. In the wake of FY 2002, and especially in WUI communities local/regional fire departments have made some pretty drastic changes. The two best examples of these changes are not mutually exclusive, and can be seen first, in new, more-comprehensive management systems and, secondly, in the augmentation (through funding and training) of WUI Volunteer Fire Departments. In the Pacific Northwest’s Implementation of the NFP community service funds have been both expanded and re-allocated in order to create agencies where before there were no agencies. One example is the merger of the Department of Interior Rural Fire Assistance and the Volunteer Fire Assistance. The NFP funded the RFA with the same processes that the Forest Service used to fund the VFA. This way both agencies were coordinated and therefore more efficient. They were able to avoid the confusion of multiple grant processes run by different agencies. Instead a ore general organization/allocation allowed one large group to focus on and fund the needs of small fire districts. The NFP also was able to set up an Interagency Task Team which developed and managed the grant distribution process from one source, instead of five as it was done in previous years. The results, among other, include a yearly increase of $1.5 million in VFA funding. The NFP encourages the development of “Local Coordination Groups” in small fire districts to expand and augment these managerial re-distributions.

(cite: NFP PNWest)

(include: Bush’s funding of Volunteer Fire Depts.)

1.C.
i. Current problems with locally-based, collaborative management systems
   a. discrepancies over the meanings of “localized control” and “decentralized management”
   b. differing concepts of inclusion: should we integrate only at the governmental level, or should we include local communities and native tribes
c. do partnerships require full consensus?

   d. what is the difference between local responsibility and local control?

How much say to homeowners have? (refer to Larry Hamilton’s comment in the Boise State report)

(cite: Boise State)

-education of the common citizen

1.A. How wildfire affects the common citizen

   i. damage to watersheds: increased water temps. and sedimentation changes affect quality and chemistry, damages fisheries (especially trout fisheries in the Pac. NWest); destroyed endangered-species habitat (ex: the Spotted Owl, in Oregon’s Biscuit Fire); soil sterilization: soil hardens, becomes water-repellant, increasing the possibility of floods; soil erosion: increases probability of landslides (and, therein, the destruction of aquatic habitats), prevents new seeds from taking root.

   ii. how can the common western citizen get involved? Write governor or senator to encourage fuel-mitigation efforts

(cite: HF’s, for eco-damage facts)

2. Healthy Forests and the NFP: Pros and cons of a strictly science-based plan

Goals: To understand the economic repercussions of Bush’s plan and to understand how management changes might affect the future of the National Forests and forestry practices in National Parks.

- whose economic interests does it serve?

   a. Stewardship contracts

      i. an agreement between agencies and the private sector which allows contractors to keep wood products in exchange for the service of thinning trees and brush, and removing dead wood.

      ii. Long-term contractors have the option of investing in forest-thinning machines and products.

      iii. Does this open the door for logging?


   b. Effect on local economies

      i. Define the damage: tourism/recreation down due to smoke, primarily; wood products industry suffers; ranching; the services that support all these; watershed damage: degrades water quality/decreases storage capacity (1996- $20 million to address sediment problems caused by erosion into one of Denver’s primary water supply reservoirs)
ii. Solutions: prioritized fuel-treatment projects with WUI communities at the top of the list; $428 million in fire prevention, preparedness, and suppression to thousands of communities; federal support to volunteer/rural departments, the first line of attack in 90% of all wildfires

iii. While these efforts help make WUI communities safer, do they improve each community’s economy?

- what will the future of forests/forest management look like under these plans?
  A. Forestry management at local, regional, and federal levels
    i. Goals: to expedite fuel-mitigation efforts, to remove the ‘rider’ which imposes extraordinary procedural requirements
    ii. Solutions: co-operative agreements with international fire fighters; collaborative efforts from federal to tribal levels to increase procedural timeliness where grants, contracts, and agreements are concerned. This involves also the removal of the ‘rider’; collaboration to inform priorities, and monitor effectiveness; an increased amount of research and spending on state-of-the-art fire fighting tools

iii. Boise State problem remains unanswered: who has the most responsibility and control in collaborative arrangements?

B. An analysis of the restorations process
  i. Goals: to expedite the restoration process, to restore ecosystem health
  ii. Solutions: prioritize active forest and rangeland management to restore health; the use, mainly, of thinning, bio-mass removal and utilization
  iii. Would this entail the construction of more roads? Could thinning lead to logging? Why not more prescribed burning?

C. A criticism
  i. does this plan just use a distorted science to serve economic interests under the veil of eco-protection?
  ii. There is little to no mention of prescribed-burning (which yields no economic dividends), no mention of logging-prevention, no mention of harmful consequences of road-building, no historical/anthropological standards of evaluation, could the removal of the ‘rider’ reduce public involvement?

(cite: HF’s)
(more info: an analysis of the 10-year plan, an analysis of the effect in National Parks)

3. Opposition to the Bush Administration plans

Goals: To highlight the benefits of the methods eschewed by the Bush Administration and analyze the meaning of their absence.

- what are the differences between environmentalist plans/ Clinton’s plans and the Bush plan?
  A. Bush compared to the Sierra Club
i. the absence of any real effort to prevent logging
ii. Sierra Club’s focus is logging.
   a. reasons logging is bad: loggers have only taken larger, more-marketable timber, instead of smaller timber required to thing the forest; loggers have left behind ‘slash’ which, deprived of shade, quickly turns to tinder; logging increases road production which encourages the growth of pervasive weeds and brush
   b. reasons other options are better: prescribed-burning: restores minerals to soil, creates habitat for wildlife (by checking insect population), releases seeds from large trees, eliminates smaller brush. Therefore, it prevents otherwise normal fires from becoming ‘crown fires’ and restores the natural burn cycle.
iii. the absence of any non-economically related ecological concerns
   a. Bush only furthers those fuel- mitigation methods which can produce marketable goods. If prescribed-burning is so ecologically helpful, how can Bush ignore it?

(cite: Sierra Club)

B. Bush compared to Clinton’s Plan
   i. the absence of any effort to prevent excessive road construction (and, in effect, limit commercial logging)
      a. Clinton’s plan protects 1/3 of the National Forest system from road building and commercial logging; includes 60 million roadless acres in 38 states, most of which are western
      b. Plans to mitigate fuel primarily with thinning
   ii. conflicting methods of aiding timber-based communities.
      a. while Bush only supports funding and prioritized fire safety in these communities, Clinton’s plan called for funding to help communities directly re-cover/re-define their economic base.
      b. “the pipeline”: the Clinton plan also calls for a basic level of timber production of remain constant for 6-7 years

(cite: CNN)

- what, then, is the best way to solve the wildfire problem?
  A. how do we compare economic gain with ecological concerns?
     i. Bush is never in favor of un-economic ecological concerns
     ii. Bush’s method of supporting communities is indirect and could prove ineffective
     iii. Does the procedural streamlining in the Bush plan cut public involvement in the environmental review process?
        a. while facts show these appeals processes to be cumbersome, it is possible that the problem is best solved not by erasing them, but by improving trust and effective communication
b. without these processes and public involvement, can Bush’s plan create a solvent long-term plan? How can the public support long-term plans in which they do not have a voice?

(cite: Chapman Denver Post article)

4. A history of White Man’s fire-suppression ethos

Goals: To provide a historical context to understand the problems with fire suppression in a way that makes their solution seem more focused.

- the 10 am policy and its economic underpinnings
  A. the fires and problems that lead to the policy
    i. adopted by the US Forest Service in the Spring of 1935, states that “the fire control organization will organize itself so as to have sufficient strength to control every fire within the first work period. Should this not occur, the attack each succeeding day will be planned and executed to obtain control before 10 o’clock the next morning” (cite: Fire in Forestry, pg. 4); focused on eliminating fire’s “afternoon run”, where heat and weather conditions make it most dangerous and most difficult to control; requires fire fighting mainly during the evening, night and early morning; also know as the ‘Economic Efficiency Policy”
    ii. Changes in management: the fire planner (a regional planner with a broader scope) could no longer concentrate forces in the area of the fire that was easiest to control. Also, responsibility was directed to each individual fire, moving the responsibility downward from the fire-management planner to each fire-incident commander
    iii. Adopted because timber was becoming more important and the Forest Service had concluded that light burning was ineffective. (cite: van Wagendonk)
  B. the economic system set up to support it
    i. the “Least Cost Plus Damage” system: “to calculate the point of maximum average productivity or zero marginal return is to sum the costs and damages associated with varying levels of protection effort and find the point where the sum is minimized” (cite: Fire in Forestry, pg. 21); remained in place for 50 years; Sparhawk diagram (Fire in Forestry, pg. 22) sought the point where the lowest suppression costs meant the
right amount of primary protection; generally equate fire control costs with fire control force.

ii. Two premises: it’s always cheaper to control a smaller fire than a larger one, and damages of a large fire (and, thus, rehabilitation and restoration costs) are always worse than those of a smaller fire.

iii. Inspired an ignorance both of forestry values and land-management objectives; reduced fire economics to simply a function of fire size and intensity

C. its successes
   i. remained unchallenged for 45 years
   ii. abandoned in 1978

(cite: Fire in Forestry. More info: on fires leading up to the 10am policy and on its successes)

- responses within the fire community
  A. the added pressure/ the element of danger
     iii. the new role of hot shots (info taken from the first conference)
     iv. stats about lost lives/injuries
  B. the new role of managers and managerial systems
     i. new fire fighting systems created new hierarchies, these hierarchies affected fire fighting solidarity, which is necessary for effectiveness
        a. note: the first instance of interagency management, the beginning of the hierarchal structure: 1928 – Sequoia NP fire, after this fire funding changed from a localized to a centralized system; responsibilities were redistributed. (cite: Fire in America, pg, 297)
        ii. Managerial responsibilities concerned only fire suppression, not the economic, scientific, bureaucratic and safety considerations that they do today. (cite: facing fire)
        iii. introduction of women into the fire fighting community is an issue (cite: facing fire)

- responses outside the fire community
  A. the popularization of Smokey the Bear
     i. the use of a manly symbol to establish a ‘Man vs. Fire’ paradigm (cite: facing fire)
  B. the image of the heroic, fearless fire fighter
     i. the cultural significance of seeing fire fighters as super-human; makes fire fighting seem like a task fit not for Man but for a heroic super Man; served to prevent the common citizen from having a role in preventing wildfires
  C. the sympathetic response to Bambi
Bambi pitted ‘fire’ vs. a cuddly, loveable animal, making it seem all the more cruel and insensitive, and making the antagonism between Man and Fire that much more intense.

The role of Smokey the Bear and Bambi in perpetuating the fire-suppression ethos: fire was seen as a destructive enemy who was to be defeated at all costs.

(cite: facing fire; more info: stats about lost live/injurious due to the 10am policy)

5. A history/anthropology of Indian People’s use of prescribed fire

Goals: To locate the use of fire (and, Human’s relationship with Nature at large) in a broader context.

- an anthropological perspective
  A. Indian People used fire consciously, understood it as an integral part of the ecosystem
     i. Indian People used fire as part of a complex system of social organization.
     ii. Tradition (mainly, the argument of Steward) believed that Indian People merely “reacted to environmental imperatives”, while Stewart’s book showed that they “directly influenced and altered natural systems” (cite: forgotten fires, pp. 21)
     iii. Stewart re-invented ‘cultural ecology’, which before him stated environments, influenced Man’s behavior. Stewart claimed that Man (and all organisms) are not only influenced by his environment, but also influences directly his environment. Indian People provided an example of this larger anthropological paradigm.

- an ecological perspective
  A. Indian People understood the science of prescribed fire and used it in a way the improved crop yield, general well-being, and wildlife habitat
     i. how does understanding Indian People’s impact on the environment affect the way westerners relate to their National Parks and Forests? Fire plays a large role in this relationship (ex: what would the west’s large oak forests, tall-grass plains or fertile desert be without the Indian Peoples impact) (cite: forgotten fires, pg. 63)
     ii. Stewart’s work highlights the changing trajectory of the ecosystem in regards to human influence (see forgotten fires, chart on pg. 52)
iii. dismantles traditional conception that pre-columbian landscapes were untouched. How does this change our understanding of the term ‘natural’? Stewart’s book shows that while Indian’s influenced the ecosystem in very drastic ways, Euro-Americans could still call what they saw ‘natural’. This proves that there must be an ecologically-friendly, and un-destructive way to influence the environment (with fire) in a way that preserves its ‘naturalness’.

- why have we forgotten these fires?

D. an appreciation of the controversy surrounding the publication of Stewart’s book (first rejected by Knopf, then Viking Fund)
   i. if White Man believed that “Indian People never used the land in the highest and best way, so they deserved to relinquish the land to Euro-Americans who represented a socially more advanced stage of evolution” (cite: forgotten fires, pp. 20), then it was easier to justify taking the land from them.
   ii. Stewart’s book proves the opposite; to ignore this today, not only admits of anthropological ignorance, but also sets us back in the fire-use issue, as close attention the Indian People and the way they used fire could teach us a lot today, not only scientifically, but also spiritually about how Man should relate to and use fire.

E. The impact of his book and work on the Indian People community
   i. court land claims debates verse Stewart and Steward were all three won by Stewart on the grounds of his empirical anthropological accounts

- what lessons could be learned from this history?

F. what is lost in Steward’s argument?
   i. consequences of an incomplete understanding of Indian People’s use of fire
      a. fire is seen in the image the White Man created of it, as that which prevents a threat and should be controlled by Man, instead of in the image of the Indian People created of it, as that which is as integral a part of the ecosystem as the wind and sun.
      b. an understanding of the way Indian People related to fire can help solve current wildfire problems, specifically those of the relationship between the common man and wildfire (the Indian People’s system teaches against the super Man fire fighter concept, and therefore allays the fire’s menacing and threatening elements)
ii. consequences of relying on theory (as Steward did) rather than empirical evidence (as Stewart did) as an anthropological tool.

A. how do we integrate this lesson into current fire policy?
   i. what current fire-use initiatives reflect Indian People’s value of fire?
      a. Bush’s plan: seems to be a modified/contemporary version of the same old Man vs. Fire paradigm. Doesn’t seek an integrative understanding of fire’s role in the ecosystem, especially not at the grassroots level.
      b. Sierra Club: while it seems to value a sort of ‘sacredness’ or untouchableness of forests, it doesn’t discuss ways to integrate human life with natural systems.
      c. Clinton’s Plan: values ‘sacredness’ of National Forests, and serves to integrate human systems economically, in the support he gives to timber-based communities.
      d. Firewise Communities/USA: defines wildfire solutions according to the dynamics (scientific and social) of each community. Then, forms a network of all participating communities. Therefore, it is the most like the Indian People’s model.
   ii. current policy must consider equally the way in which Man is affected and affects his environment. This is the first step to an integrative understanding of fire’s role not only in the ecosystem, but also in contemporary western culture.

(cite: forgotten fires)

6. Harold Biswell, the prophet, and Smokey the Bear’s mid-life crisis

Goals: To begin with the framework that will lead us to broader conclusions in bullet 8.

- the recognition that the 10 am policy lead to a build up of hazardous fuels
  C. the fires and dangers that lead to Biswell’s work
     i. firest harmful effects seen in rangelands: they were declining in value because of decreased brush density; they became the only areas where prescribed burning was allowed; 1945- first authorized burning in 20 years; 1955- first considerable effect of growing WUI: rangeland fires cease as liable farmers fear the gaining proximity of their neighbor.
     ii. Biswell’s early work: 1950s- advocated brining prescribed fires to forests in order to improve timber production, primarily, and secondarily, to improve grazing conditions, by controlling brush; 1956- more studies are done to how that prescribed fire can reduce fuel hazards
     iii. Fires like the Berkeley/Oakland Hills one in 1970 where 37 homes were destroyed
  D. Biswell’s eccentric character and consequent opposition to and criticism
i. Biswell held educational ‘field days’ where he took a group out and demonstrated first-hand the effects of a prescribed burn; field days extended to 1973, with eventually 175 attendees

ii. Many were still uncomfortable with the idea of prescribed burning, most likely because it asked them to be-friend something which up until then had been viewed only as an element of fear and destruction; most people, even foresters, did not understand the difference between a wildfire and a prescribed fire: highlights early difficulty with shifting lexicon, the struggle to view fire as a “fascinating constructive, rather than destructive, force” (cite: Prescribed Burning in California, pg. 15)

E. Biswell’s early successes
   i. 1965- Whitaker’s forest near Sequoia and Kings Canyon National Park: studied the litter-production of the forests noting that different species had different effects on fire behavior. (ex: 100% mortality of giant sequoia seedlings in an unburned plot)
   ii. 1968- Biswell’s work influenced certain National Parks to consider not only wildlife in its policies, but that it should also manage the parks as complete ecosystems, which include fire; fire research programs begun in certain parks, like Sequoia and Kings Canyon, other parks joined later on, like Yosemite in 1970 and California state parks in 1975
   iii. 1978- Forest Service changes its national policy to encompass total fire management: prevention, suppression and use- marked the end of the 10am policy and the first step towards integrative management systems.
   iv. 1981- biggest impediment to burning on private lands removed: Senate Bill 1704 authorized a vegetation management program where the California Department of Forestry could contact private owners to burn on their property. The first large step towards public/private integration

(cite: van Wagendonk and Prescribed Burning in California)

- an analysis of the different scientific methods of fuel mitigation and their economic consequences
  A. thinning, logging, clearcutting, herbicide use, prevention of road-building; and each method’s economic consequences.
     i. thinning: removal of ‘slash’ and small-diameter trees
     a. effectively mitigates, however, thinning has little to no economic dividends; research must be done to find a market for small-diameter trees
ii. logging: if used, should be done responsibly; does have some good ecological consequences: reduces heavy fuel loads, can be used to restore wildlife habitat, can be used to contain pest outbreaks, can improve water quality and help clean the air.

a. economic benefits are many: employs 2 million people, 1.5% of the labor force; policies which move away from timber harvesting will almost always leave timber-dependant communities devastated; if done, should be done according to the Bureau of Land Management multiple-use mandates.

iii. clearcutting: a forest-regeneration method used to produce even stands, consists of cutting all trees; serves to regenerate shade-intolerant species, which decline in the absence of natural fire regimes; has been imposed under regulations of size, retention of patches of trees, conformation with harvest/landscape features; useful in: stands of low-value, depressed, deformed trees; stands suffering from insect diseases, or fire effects; regeneration of shade-intolerant species (support, also, of songbirds and deer-edge habitat); where large-scale natural disturbances have left harmful patches in the forest; harmful in: visible areas, areas with forest-interior dependant species, watershed areas, landslide areas.

a. economic effect vary case-by-case. Most often doesn’t yield considerable economic dividends, as it is usually concerned with the removal of dead, diseased, or low-value trees; furthermore, harmful effects like watershed damage, landslides and aesthetic impairment could cost more than the benefits.

iii. herbicide use: useful as a form of vegetation management, while its use in forest management is still controversial. Serves to significantly increase the growth of desired tree species by managing non-crop vegetation that competes for light, water, and nutrients; can be used also in protection from fires: the removal of brush and non-crop plants; above all, serves to increase biodiversity; if used as fire protection, should be only a corollary to other methods like prescribed burning.

a. more research needs to be done to determine the economic consequences. However, it may be a good economic choice since it is easier to implement than other forms of vegetation control; it may be a bad economic choice since we do not know enough about its toxicity and the impact of its surfactants and additives.

iv. preventing road-building: road-building spreads exotic plans, among other effects, which serve to increase fuel loads; if used, should appeal to certain Forest Service
standards, today about 60% of FS roads are below these standards. (cite: SAF)

a. economic consequences are good in that roads allow access for recreation, rural travel, fighting fires, controlling pest out breaks, as well as access to oil, natural gas, minerals, livestock grazing and other forestry products; however, they come with the possibility of environmentally/economically disastrous consequences: erosion and reduced water quality, are some examples. (cite: SAF)

7. The fuel mitigation debate today and the questions of rehabilitation and restoration

Goals: to re-discuss the ecosystem/economy debate we started in bullets 2 and 3

- an analysis according to ecosystem types
  A. grasslands/rangelands, dense forests, WUI, historical sites
     i. fire is a determinant of grasslands: if you don’t burn grasslands, trees grow, which severely inhibit wildlife grazing; this is true for arid grasslands (deserts) to most grasslands (tall grasses).
        a. grassland fire is difficult to organize/manage because it varies case-by-case: different animals have different reactions to fire (snakes, for example, are affected most harshly); also, other variables to watch include vegetation which grows during the temporary suppression of grass by fire, and the various responses of birds who change according to their nesting and foraging requirements
     ii. problem presented by dense-forests: fire-treatment would affect air quality too drastically; thinning isn’t economical; dense-forests consist of 40 million acres in the west (cite: facing fire); logging has undesirable consequences; environmentalists and residents are still pushing suppression in favor of thinning, or logging.
a. solutions include the search for a market for small-diameter wood, dialogue between WUI residents/environmentalists and mechanical thinners: the need to reevaluate the idea that cutting down trees is always bad.

iii. problems at the WUI: homeowners and managers alike should tailor their mitigation methods according to the type of ecosystem they are situated in.

a. grassland WUI: expanding WUI fragments grasslands. Grazing in grasslands is a kind of fuel reduction method, however, as the WUI becomes fragmented, the dynamics of grazing are changed. Fragmentation also makes prescribed fires a difficult option, as the become subject to strange wind patterns and other variables that make control and prediction much more difficult.

b. These problems should not only alert homeowners to the dangers of fires which are difficult to predict, but more importantly zoning contractors and managers should be alerted to better inform future WUI expansion plans.

c. Dense-forest WUI: prescribed burning isn’t an option, since it degrades air quality too much. Best option is thinning, however, economic consequences inhibit this process and residents get angry when trees are cut down; solutions include creativity in the economic sector and dialogue in the public sector; WUI residents should understand that they play a crucial role (in terms of changing their attitudes, this includes environmentalists); also risk messages need to come to the WUI with action recommendations.

d. Zoning solutions may need to include more Land Use Planning restriction, as of now, there are few; we also need to understand that after the fire helping rebuild might not be as important as furthering fire education; also, changes in land ownership may prove more helpful than zoning regulations.

iv. problems at historical sites.

a. the mixture of science and history: asks that pivotal historical sites be restored to the state of their glory days; not only a historical question (how much sagebrush was there, etc) but also a scientific one (how do we re-create the landscape of 150 years ago).

b. Little Bighorn example: An attempt to re-create the battlefield at Little Bighorn appealed to a rich photographic archive, including previously unprinted negatives. At the time of the battle there was some grass, and lots of sagebrush. The significant presence of both bison and Indian horses, in the mid-nineteenth century, had played a big role in producing this distribution of plants; thus, one
way to restore the place to its condition in the 1870s would be to have Indian people graze horses on the site.

b. Difficulty in higher elevations, the need for site-specific info: it is easier understand and recreate fire regimes of the past in lower elevations.

B. an analysis and explanation of when these areas are in the most danger.
   i. grasslands: when a universal paradigm is applied, when WUI fragments the landscape; dense-forest factors: when thinning isn’t applied, when WUI puts house in heavy fuel-load areas, bud-worm infestations
   ii. examples of extreme cases

(cite: Facing Fire; more info: particular grass/dense-forest fire cases)

- current disagreement in the fuel mitigation debate
  A. a re-focus of the Bush vs. Environmentalist debate
     i. the need to re-evaluate the Clean Air Act according to the needs of prescribed burning; especially important in grassland ecosystems at the WUI
     ii. the need to find a market for thinning; especially important in dense-forest ecosystems at the WUI
     iii. over-all need for Bush to allow more burning and environmentalists to allow more thinning; highlights the need for a case-by-case system of analysis.

- current disagreement in the rehabilitation/restoration debate
  A. the differences between the two
     i. rehabilitation: emergency work necessary to stop erosion and other immediate threats to the charred landscape, easy to fund
     ii. restoration: part of the ongoing land management responsibilities of land management agencies, very difficult to fund.
     iii. We need to integrate management of the two; this requires the use of a long-term, centralized scale to avoid problems like planting shrubs which help rehab, but fuel fire later on. Biggest problem as of 2000: once a fire is suppressed fire commanders no longer have a responsibility to the fire area, it is transferred to the state or forest where the fire occurred.

B. historical and ecological problems with restoration
   i. historical restoration: teaches us a lot about fire regimes of the past, helps to monitor ecological factors and the consequences of changing systems: drought, climate variability and the effects of heavy burning seasons (like the fires in 1786 and 1859) are
some examples; close analysis proves that historical restorations or re-creations vary in difficulty from site to site and from ecosystem to ecosystem, it requires, then, specific management systems.

ii. Ecological restoration: difficult to fund and plan; suggests a Richter scale for fires: based on temperature, fuel load, smoke, relative humidity, wind and other variables; this would help experts understand how to treat a particular fire as well as the public who would better understand the nature of each fire. A Richter scale would also allow us to monitor fires more closely, which would only increase our understanding of how to restore them when they are done burning; highlights the point that restoration management should be coupled with suppression management to appreciate a better understanding of the full fire cycle, this requires that we understand the limits of suppression and restoration- an understanding of the entire cycle through a centralization management and funding.

(cite: Boise State)

8. The future of wildfires: Lexicon, trust and cooperative management

Goals: To re-focus the entire question in terms of what the public can do and to modify the public’s perception of risk.

- the origin of fire’s pejorative connotations
  A. the need to understand that fire was painted into a pejorative context out of both ecological ignorance and economic greed.
  ii. appeal to history/anthropology and contemporary mistakes to enlighten on the first account.
  iii. The need to prioritize ecological sustainability over economic gain; the idea that ecological systems-revisions come with economic systems-revisions
  iv. The need to allay the fear of the WUI resident by teaching/using fire as a constructive element of the ecosystem

B. an analysis of the need and the methods to reverse this connotation
  i. the appreciation of fire as something constructive
     a. a revision of the biblical representation of fire
     b. where can we look for other interpretations? Eastern traditions? Indian People’s use?
c. How do we reverse/revise historical fire lessons? For example, how can we use the Yellowstone Fires of 1988 to see fire as a constructive element of the ecosystem.

ii. Exurban residents need to realize the difference between them and rural residents; responsibilities in each area are much different.

- The origins of mistrust in fire management policies
  A. Bridging Perspectives
  i. Those who value forests for biodiversity’s sake will have a different view on logging than those who value forests for industrial/societal uses, members of one camp feel the other has a hidden agenda.
    a. Solutions include long-term plans which map out comprehensive strategies which were arrived at through discussion and compromise (Bush has a long term strategy, but was it arrived at through compromise and public discussion?)
  ii. The need to clarify the purpose/use of lands according to ecosystem types: policy decisions should consider the differences of forest and rangeland policy, while finding a way to integrate them into the same policy.
  iii. The need for greater consensus/co-operation according to the right (morally, scientifically, and economically) fuel mitigation methods. – requires compromise
    a. Logging, for example, is unfavorable to environmentalists, but it might be useful in that it could provide an economic base for thinning and other, more-ecological, fuel reduction methods; this, however, still entails an acute understanding of where and when to use logging; requires, above all, compromise from different special interest groups.

B. The complications of and methods to resolve the problem of extra-long courtroom deliberations
  i. Stats about how courtroom litigation has delayed the employment of policy and lead to larger fires. 48% of all Forest Service mechanical fuels reduction projects were appealed, extends the administrative process to a full year, one in ten appeals are effective. Examples of fires that struck during an appeals process: the Baca Ecosystem Management Area- scheduled to mitigate fuel over 7,000 acres, lawsuit filed and by the time only 300 acres had been treated to withstand fire, the Rodeo fire broke out, burning 460,000 acres of forested lands and destroying 450 homes in 90% of the Baca project area).
ii. Compare these stats with others who say that appeals haven’t gotten in the way. Ex: Chapman’s discussion in the Denver Post article.

iii. Wildfire policy should be coupled with other Land Management Policies
   a. Stewardship Contracts: allows receipts from timber harvest in a particular area to stay on site to finance prescribed fire or other restoration projects. (cite: Boise St.)
   b. Wyden-Craig legislation: allows a portion of congressionally-appropriated funds, designed to help stabilize resource-dependant communities, to finance local projects. (cite: Boise St.)
   c. Conservation easements: “a voluntary legal agreement between a property owner and a qualified organization, such as a land trust or government agency that limits the activities and uses that can take place on the property”; “is usually sold to ensure that land will not be developed, subdivided, or converted to non-forest use, often to preserve wildlife” (cite: SAF)

v. Problems with streamlining court appeals: does the public lose a voice? Is this happening in the Healthy Forests?

- an analysis of co-operative management
  A. Current advances
  i. The Interagency National Fire Plan Strategy Group: 12 separate groups which together coordinate interagency action
  B. An analysis of the economic effects of cooperative management on local, regional and federal levels
  i. Funds are distributed more evenly; example: volunteer fire departments (VFA) who joined with the rural fire assistance (RFA) and significantly increased funding
  ii. Universalized funding allows more money to be spent on more expensive tools: models of the WUI in 2030, GIS instruments, fire-prediction models, community activity days
  C. An analysis of the effect of cooperative management on fire management on local, regional, and federal levels
  i. Interagency management paves the way for long-term solutions by centralizing/universalizing methods and desired outcomes
ii. problems with integrative management systems: this is new and responsibility/accountability is still only vaguely defined; we may lose track of public voice, must continue to integrate management systems with the public; difficult to run centralized government of a mosaic of case-by-case situations, we must find an equilibrium, a question which is answered when the accountability question is answered.

D. examples of successes of cooperative management
i. VFA; FireWise Communities/USA which uses ecological and economic management systems to organize and evaluate mitigation and prevention initiatives.

ii. The need to increase the funding of the Forestry Inventory and Analysis Program (FIA): the only comprehensive inventory and analysis program, allows management conglomerates to continue to run effectively. (cite: SAF)

E. ways the public can be involved in the activity of management conglomerates
i. focus should be on education through websites, town meetings and the media; residents and leaders at the community level should understand the extra responsibility that comes with living at the WUI

ii. non-WUI residents should understand and support their state funding of fire protection and management systems in order to ensure clean water, air and recreation sites; WUI residents should be involved with FireWise Communities/USA activities in order to best understand how different management duties are collaborating to prevent wildfire in their area; WUI and non-WUI residents should understand that they are only at risk when they do not understand the fire cycle and how they can (by having fuel loads at the home site, or by not supporting state initiatives) affect that cycle.