

## Fire Ecology: Issues, Management, Policy, and Opinions

A forum for the Association for Fire Ecology

### RESPONSE TO THE INGALSBEЕ ARTICLE IN FIRE ECOLOGY, Vol.1 No.1, APRIL 2005

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In his article *Fuelbreaks for Wildland Fire Management*, (Fire Ecology, Vol 1, Nbr 1, April 2005), Timothy Ingalsbee calls for "...a wider range of designs, methods, and uses for fuelbreaks than has been offered in the typical fuelbreak proposals of the past." But then he takes a very narrow view of what recent fuelbreak proposals have actually contained, and promotes an even narrower view of how fuelbreaks should be used.

The first example Ingalsbee mentions, to illustrate his view that the only purpose of a typical fuelbreak is to enhance fire suppression in pursuit of absolute fire exclusion, is the Quincy Library Group (QLG) Project. That caught my attention because: (1) I wrote the first draft of what became the QLG defensible fuelbreak strategy, and (2) Ingalsbee didn't quote any of the three QLG papers in his list of references, but instead chose to mis-characterize the QLG fuelbreak proposal in at least two ways. He quoted one sentence taken out of context from a Forest Service EIS, leaving the strong implication that the only purpose of the QLG fuelbreaks was to "allow fire suppression a safer location from which to take action against a wildfire," and he describes the QLG fuelbreak network as a "grid-like pattern of parallel strips cut across the landscape." Neither of these is a fair description of the

fuelbreak strategy that QLG proposed in 1994, which is being implemented under the Herger-Feinstein QLG Forest Recovery Act of 1998.

#### What QLG Actually Said

QLG has always made it clear that using fuelbreaks to support safe and effective fire suppression is a necessary first step, but just one component of a comprehensive forest management proposal, not the whole strategy; and that fuelbreaks should be located so as to take best advantage of the land forms and road pattern, so they would almost never resemble a "grid-like pattern of parallel strips cut across the landscape." I believe these points were made clear in the following excerpts from a policy statement adopted by QLG in 1997:

#### "What the QLG Strategy is:

Since 1994 QLG has pushed for "a network of defensible fuelbreaks" as the first stage of a comprehensive strategy to improve our protection from large-scale high-intensity wildfire. These fuelbreaks would not be instead of general area thinning, but rather the conduct of early thinning efforts in a strategic pattern. ...

[S]uch treatment to be in strips of about 1/4 mile width, located where possible along existing roads. These strips should form a network (not a square "grid," but an irregularly shaped network) that generally reflects the pattern of existing roads and the locations of particularly hazardous fuel concentrations and assets of high value that most need immediate protection. ...

After the initial period [of fuelbreak construction] ...area treatments would also aim to reduce fuel beds and fire ladders, but probably to a standard somewhat less strict than the defensible fuelbreak prescription, and without the need to support direct suppression of intense wildfire within these areas..."

(The full text of each QLG paper referenced by Ingalsbee is posted on the web site, [www.qlg.org](http://www.qlg.org).)

By focusing my response on fuelbreak issues, I do not mean to imply that the QLG proposal stops there. Quite the contrary. QLG intends the fuelbreaks not to be permanent land allocations, but instead to blend back into the general forest when sufficient progress has been made toward implementing the Desired Future Condition recommended by QLG in 1994 and largely reflected in the Sierra Nevada Framework Decision of 2004. QLG's Desired Future Condition is an all-age, multi-story, fire-resilient forest, which mimics as much as possible the structures, species composition, and ecological functions of the pre-settlement forests. Furthermore, the QLG program recognizes how important it is that our forests function well as upper watersheds of critical importance for all of California. And finally, the QLG program emphasizes the need for fuel reduction and forest restructuring at very large scale within a relatively short time by the most cost-effective methods available. The simultaneous requirements for large scale and fast pace in reducing fuel,

along with severe limits on the available budget, give us no choice except to have much of the work done by a timber industry that is both well regulated and profitable. We need to maintain that workforce and industrial infrastructure where we still have it, and to re-establish it as quickly as possible where it has been decimated in recent years.

### **The Ingalsbee Proposal**

Ingalsbee concludes his paper with eight recommendations that I would like to comment on. He says that

"Elements of an alternative approach to fuelbreaks would involve:

1) expanding the use of fuelbreaks to include landscape fire reintroduction (through prescribed burning and wildland fire use) rather than exclusively fire exclusion and suppression;"

Comment: First, the choice doesn't have to be either reintroduction or suppression; both of them are necessary in a good strategy. And nobody is proposing "exclusively fire exclusion and suppression." Second, it is not feasible and would be self-defeating to make reintroduction of fire the first step or the primary consideration. It is not feasible mainly because the fire ladder trees that are a major hazard in most places cannot be removed by prescribed fire, they can only be killed. And it would be self-defeating because attempts to burn out fire ladder trees would require repeated fires, some of them probably hot enough to risk severe damage to the large trees we are trying to save. Furthermore, the size and difficulty of the required burn program would push fire crews and burn windows well beyond historical limits, and even within those limits Forest Service prescribed fires have escaped control about 1 percent of

the time. Public opinion simply won't accept that level of risk in a larger burn program, especially when prescribed fire would more often be conducted on difficult terrain, in marginal conditions, and near communities. Far from being a cheaper alternative, an expanded program of prescribed fire that experienced an escape rate anything like Forest Service history could have extraordinary dollar costs, and the damage to public confidence would be truly disastrous.

“2) analyzing the potential environmental effects of future fire suppression actions conducted within or adjacent to fuelbreaks;”

Comment: This is already part of any reasonable fuelbreak analysis. For example, one very good reason to base suppression activities on a fuelbreak network instead of ad hoc firelines is precisely to avoid the adverse environmental effects that now routinely occur when wide dozer lines are cut straight cross-country down to bare ground ahead of a fire or to join disconnected areas of fuel reduction.

“3) locating fuelbreaks near communities-at-risk rather than remote backcountry areas;”

Comment: The HFQLG Project does put wide fuelbreaks around communities-at-risk, but also recognizes the need to protect other parts of the forest and watersheds as well. One major consideration here is to give communities additional “defense in depth” based on fuelbreaks across the forest, not just at the edge of town.

“4) locating fuelbreaks along strategic sites such as main ridges that potentially offer effective fire containment or control sites rather than random sites associated with commercial-grade timber stands;”

Comment: This is another false choice. The QLG fuelbreaks are intended to be installed along main ridges and main roads, because these are the existing features that usually give the most defensible locations on which to base suppression efforts. And while some timber will be removed where mid-size trees are part of the fire ladder, or overstory thinning is required for improved a stand's resistance to crown fire, there are strict limits on the maximum size tree that can be removed, and the treatment locations and prescriptions are chosen to achieve fire protection objectives, not for timber production.

“5) designing fuelbreaks with patterns that more mimic a natural fire-maintained landscape mosaic (e.g. irregular-shaped area-wide treatments) rather than artificial patterns (e.g. straight and narrow linear breaks);”

Comment: First, nobody is proposing straight and narrow fuelbreaks. But the real problem here is Ingalsbee's failure to make the all-important distinction between a fuelbreak strategy and a strategy of irregular-shaped area-wide treatments. “Area-wide” can only mean “disconnected treatments” until a very large percentage of the whole landscape is treated, and we can't afford to wait the 30 to 50 years that would take, even with an optimistic assumption of treatment capacity. Furthermore, the early stages of disconnected treatments scattered area-wide cannot provide a decisive benefit to fire suppression efforts. Ad hoc firelines, incapable of supporting direct attack on a high intensity fire, would still have to be constructed cross-country from scratch if they were attempted at all, and disconnected treatments cannot provide the quick access and safe lines of retreat that are inherent to a

well designed fuelbreak network. The whole point of a fuelbreak strategy is to disconnect the fire with continuous treatments, not disconnect the treatments to keep having continuous fires.

“6) retaining rather than removing overstory mature and old-growth trees;”

Comment: Nobody is proposing to remove “old-growth” trees in the construction of fuelbreaks. Neither the QLG Proposal nor the HFQLG Act requires or permits such action. Whether mature trees would be removed is harder to say, because people use different definitions of “mature,” and it would depend on whether the canopy was so dense as to be a severe crown fire risk without the removal of some fraction of mature or near-mature trees.

“7) prioritizing treatment of surface and ladder fuels rather than reduction of canopy fuels;”

Comment: Again a false choice. The QLG program does treat surface and fire ladder fuels, but at the same time provides for the reduction of canopy fuels to safe levels where necessary. The correct priority is to achieve the fastest possible protection from catastrophic wildfire, and that requires a program capable of reducing surface, ladder, and/or canopy fuel as required by actual stand conditions, not as dictated by a pre-conceived doctrine.

“8) constructing and maintaining fuelbreaks with manual cutting and prescribed burning rather than commercial logging and herbicide spraying.”

Comment: Another false choice, but the main problems here are: (a) Manual cutting is sometimes required by circumstance, but it is

neither technically nor economically feasible to do the required thinning at adequate pace and scale with manual cutting alone or as the primary method. (b) The scale of open burning required by Ingalsbee’s proposal would produce amounts of smoke and additional hazards not acceptable to current populations, especially when much cleaner and safer disposal could be done if most of the material were made into lumber or burned in biomass power plants. (c) It is disingenuous to imply that herbicide use is the alternative to manual cutting and prescribed burning. Herbicides can’t remove existing fuel, they can only add dead vegetation to the fuel load, so neither mechanical nor manual thinning would likely need or use herbicides in the initial treatments. And for longer term maintenance of acceptable fuel loads, the same herbicide issues would arise whether those fuel loads were initially established by hand or machine methods.

**Summary**

Ingalsbee has a program, but it isn’t “to explore a wider range of designs, methods, and uses,” it is almost exclusively to reintroduce fire as the primary goal and overriding consideration. While the reintroduction of fire is one element of a reasonable program, it can’t be the primary goal and main driving force of a comprehensive strategy that actually has a chance to restore sustainable fire-resilient forests to our landscapes.

Disclaimer: While I am a member of the Quincy Library Group, the opinions expressed here are entirely my own, not to be taken as representing QLG except where a QLG paper is directly quoted.

