

Up the Ante
A Hazard Tree Initiative
Winter, 2003 Progress Summary

Overview

Up the Ante is an ambitious program addressing accidents caused by falling live and dead trees. Originating in the Northern Rockies, Up the Ante builds awareness by challenging employees to find new solutions. This employee participation process reviews existing guidelines and rules, and seeks improved policy and procedures. Additionally, each unit prepares and submits a briefing paper, describing specific hazard tree species, indicators, and mitigations for their locale.

“Up the Ante is the first effort about guidelines or how to identify hazard trees”
“Refresher on existing information to employees is timely”

Up the Ante is a first step. We survey the workforce, and receive our marching orders. Many outstanding suggestions emerge for a continuing program. This paper is a compilation of findings to date, and a profile of what a comprehensive program may look like.

The Questions presented on a note-taking page are:

- ***How well are we practicing current guidelines?***
- ***How adequate are the existing guidelines?***
- ***Is it realistic to expect people to be mindful and in compliance with these guidelines at all times?***
- ***New Directions***
 - *Generate new ideas to prevent hazard tree tragedies*
 - *Suggest simplified format for guidelines*
 - *Suggest programs, publications and research*
 - *Assign individual(s) to prepare local hazard tree briefing paper*

A web page has been established as a library and resource of hazard tree related information. It may be found on the Forest Service Intranet (http://fsweb.r1.fs.fed.us/forest/sales/hazard_trees/index.html).

This program will breathe new life into the 1992 National Hazard Tree Study.

A Plausible Hazard Tree Program completes this paper.

Deployment and Participation

Up the Ante has been vigorously promoted across the Northern Rockies and Nationally. The USFS Northern Region used Up the Ante as the OSHA mitigations in response to David Rendek's tragic death. The NWCG FFAST chose Up the Ante as the 2002 national emphasis topic. A web page was developed where a first time library of hazard tree documents follows a Synopsis, Facilitator Instructions, and Note Taking Page. An e-mail address was provided for participating units to submit their findings and suggestions.

Submitted findings contain numerous patterns, and some real gems of ideas. Line officer participation included a Deputy Regional Forester, District Rangers, etc. Clearly, Up the Ante was well received; however national priorities shifted to intense Thirty-Mile Fire mitigations, and the number of Note-Taking Pages actually submitted in 2002 to the e-mail address was below expectations.

The initiative has caught on in other parts of the country, and remains very valid for continued use. Up the Ante has been requested for safety and saw agendas across the country. Other regions have been encouraged to submit information specific to their timber types to our web-page.

Findings from the field

Up the Ante sessions were successful in achieving vigorous discussion and pursuing new ideas. It is particularly interesting how each session followed a unique path, and often approached the problem from diverse angles. "Group Think" may be the operant words. Even so, patterns emerge offering direction for future development.

The USFS Health and Safety Handbook and the Fireline Handbook were revealed to be in need of improved guidance and direction. Briefing standards, information related to indicators of tree structural problems and common mitigation measures are absent.

Several of the Up the Ante sessions utilized a very effective Potential Green Tree Hazards PowerPoint presentation prepared by Kim Johnson. This slide show is included on the Hazard Tree web page. The presentation has achieved national recognition, and direction to expand its scope.

Synopsis of findings from the field

Current Status

Question: How well are we practicing current guidelines? Many folks said they were not aware of the guidelines (“What Guidelines?”). During some activities where hazard tree safety was stressed (wildfire and campgrounds), they do well; however, hazard tree safety is not stressed for most of our field activities. Line officer commitment was one key identified. While some groups felt the current guidelines were many, even too many and hard to assimilate, others said they were not adequate. Some did not know of the 2½-tree length safety buffer around felling operations, and another group felt it was too restrictive for fireline construction. (i.e. saw teams would then have to be about 250 feet ahead of the first line diggers, and in some terrain and fuel types, too far from the black safety zone.) The USFS Health and Safety Code Handbook identifies 2½ tree lengths from a falling operation, whereas OSHA is 2 times the tree length from a falling operation. Neither identifies mitigations for known hazardous trees or snags for non-falling situations. 2 times the tree length from the known hazard tree is the most common interpretation to date. Some folks felt that their unit had a pretty good ‘Situational Awareness’ culture that communicates concerns amongst crewmembers. Non field-going employees do not have, or have lost their awareness of the hazard.

Question: How adequate are the existing guidelines? Responses range from “Guidelines are NOT adequate” or “Unrealistic” to “They are fine if we would just follow them”. Complacency in familiar surroundings was cited as a problem, and our oversight of ground operations has waned.

There is a perception that management goals (habitat and targets) are sometimes inconsistent with safety direction. “Existing guidelines are sparse, scattered, generic and don’t define what a hazard tree is. To take this issue seriously, people need a one stop comprehensive location for definitions, and guidance on mitigations.” “If people are still getting hurt and killed, the guidelines must be inadequate.”

On a positive note, Job Hazard Analysis documents on some units were more complete than national guidelines.

Question: Is it realistic to expect people to be mindful and in compliance with these guidelines at all times? “Absolutely, if they do not want to get hit by a tree” and “We can’t possibly evaluate all of the millions of trees we walk by” appeared on the same page, as was “Employees could be mindful if the guidelines were easy to find and understand”. “Reasonable as presented in the Incident Response Pocket Guide” says another group. “Individuals must be trained commensurate with habitat type” and “We can’t fall every questionable tree on fires, in recreation areas, along trails and roads”. One comment said we can be mindful of our level of experience and how our experience is applicable to a particular situation. Keeping folks properly informed is difficult with the workforce moving to new and different job sites regularly. Several also commented about information overload, and “*No more checklists or forms*”. People want a simple system that can be universally understood and implemented.

New Directions

Findings in the New Direction section loosely fall into 2 broad categories, those related to pre-field ***Awareness and Education***, and at the site ***Assessment Before Committing***. Reading through these comments reveals the high level of engagement and participation at each unit. In a sense, we achieved a task force effort at each unit.

-Awareness and Education

- Too much information, Information Overload
- Concern about too much safety information crammed into a small period of time at beginning of the season.
- Get rid of subjective and variety of information
- Have field input to new guidelines to insure practical, usable.

- Focus on Knowledge, not Checklists
- Work on the mindset of the crew.
- There is more available information than most employees are aware.
- Policies and references should be consistent and well integrated.
- Need references (including descriptions, definitions, mitigations) easily available, in one web location.
- Develop Regional Hazard Tree Working Group, with web site
- Develop a separate Hazard Tree/Snag safety section in Handbooks, as opposed to including with in fire, sawing, or recreation, etc.
- Use existing references instead of creating new references or policies.
- Develop regional library with videos, information, etc.
- Include field / hands on training
- Choose field-training sites with good examples of structural issues.
- Garner information from experts, including:
 - Scalers
 - Plant pathologists
 - Climbers
 - Fallers
- Do the other agencies have a more formal hazard tree format? (one was observed on a BLM fire in Colorado this last summer)
- Capitalize on what is being used by private/professional sawyers.
- Look to Canada where they apparently have specialized safety officer to certify a division or section as “snag hazard free”.
- Have guest speakers present experiences and knowledge (Silviculturist and pathologists to name a couple)
- Links to Arbor Master publication and web page
- Incorporate into existing training classes at all levels, building a foundation at beginning levels.
- Share information across resource areas
- Study species in each geographic area
 - Provide pocket cards with color pictures
 - Study green Tree hazard awareness
 - See Kim Johnson’s Potential Green Tree Hazards
- Better define what is a hazard “tree”
- Utilize JHA process
- Have a separate JHA for hazard trees while in the field.
- Coordinate efforts with neighboring units.
- Develop Tree Hazard Synopsis for each Forest (or other unit in other agencies).
- Educate new employees (and volunteers)

- Include hazard trees as task book elements (Crew Boss, Strike Team Leader, Div Sup, Safety Officer, Falling Boss, etc.)
- Include in saw re-certification process
- Include indicator, tree health, structure issues and pathology in sawyer training at all levels
- Educate non sawyers as well
- Require training every 3 years
- Habitually use and practice skills and knowledge to increase awareness.
- Supervisors and employees are accountable. How to improve this?
- Use a mentoring process to share knowledge and wisdom
 - Recognize and help bridge the gap between long term experienced employees and new people.
 - “The old salts possess a healthy paranoia about hazard trees the younger generation doesn’t seem to get. These Power Points (and such) are an attempt to record some of what the “old salts” know in their bones. How people really “learn” is a curious phenomena. The old salts sometimes resent attending safety meetings to be told something they know well... but the newer people need this information. The old salts can share a great deal of wisdom on this subject (as the did today) (Chris Schow)
- Use “corporate knowledge” to learn from experiences of others’ past experiences.
- Utilize de-briefings and after action reviews to reinforce knowledge
- Study tragedies after they happen
- Use real world examples, followed with field time for every one
- Recognize basic structural indicators
- Study soil types and role in supporting trees
- Develop Power Point to provide information in with regard to structural problems, species, habitat, elevation, disease, etc.
- Become knowledgeable in appropriate mitigations for a given situation.
- Need good current safety hazard tree poster for public to be posted at trailheads. Another for recently burned areas.

-Assess Before Committing

- Ask for local information related to disease, insects, species, etc.
- Arriving resources to receive local knowledge/briefing
 - Disease Problems

- Specific species with root problems and shallow roots
- Effects on fire behavior
- Indicators
- Draught, decadent, how managed
- Previously burned
- Mitigations
- Briefings and tail gate sessions
 - Weather reports
 - Proximity of heavy equipment
 - Assess adjacent trees
 - Aviation
 - Bucket drops may have weakened limbs, trunks, and roots.
 - Retardant drops may have weakened limbs, trunks, and roots.
 - Very High risk areas
- Take plenty of time to do the assessment right.
- Use risk management process, and walk away if not feasible.
 - Incident Response Pocket Guide
 - Job Hazard Analysis
 - Risk / Gain, Severity / Probability
 - Limit exposure
- Dedicate knowledgeable individuals able to assess for initial attack in snag prone areas.
- Change business as usual in relation to hazard trees, change tactics as necessary.
- Lookout and crewmembers agree on escape routes and communication protocols.
- Remind employees to listen carefully for sounds that may alert of snag problems or immanent dangers.
- Identify high risk areas
- Areas to assess
 - Parking
 - Working
 - Transportation routes
 - Sleeping / breaks
 - Safety zones
 - Administrative sites
- Wear hardhats in burned areas. (This is addressed to people walking through the woods, as opposed to on a work site)

- Flag, post lookout, or otherwise communicate to others
- Flag hazard Trees, and do not let crews back in the “Kill Zone” is the only way.
- In the field, point out situations to less experienced individuals.
- Be mindful of your own skills; do not let your ego get in the way.
- Cease mopping up “political smokes in the interior of fires.
- Size up
- Not every tree needs to be felled, flag, relocate, etc.
- Not just big trees.
- Don’t turn your back, keep checking, even if the area has supposedly been snagged
- Recognize we may be able to get away with an unsafe act most of the time...
- ***Don’t walk under the lean***
- Asses attention level / complacency
- Look up
- Supervisors must redeem their responsibilities
- Dig at the roots of trees showing indicators of root disease
- Bore trees showing indication of rot
- Learn to “Thump” trees to assess soundness
- Indicators (also called rules of thumb)
 - Other snags in area
 - Leaning trees
 - Broken tops and Branches
 - Root problem indicators
 - Conchs, cat faces, woodpecker holes, burning stump holes, burning trees, etc.
 - Hazard Tree Watchout Areas
 - Snags have been falling
 - Wind, or predicted wind
 - Lack of lookouts, communications, escape routes, or safety zones, not enough lookouts for number of snags
 - Steep slopes with possible snags / hazard trees above
 - Shallow soils
 - Wet conditions in spring and fall
 - Night
 - Fatigued
 - Unable to see tops of trees
 - Etc.
- Activities requiring hazard tree expertise

- Fallers
- Climbers
- Firefighting
 - Consider routing line around individual tree/snag
 - Consider routing line around hazard tree area

Question: How can guidelines be simplified into an achievable format?

- LCES
 - Often suggested as a tool appropriate for hazard tree issues. (or LACES)
 - Seeley Lake uses LCES in their JHA
 - Identify Escape Routes and Safety Zones, especially in large burned areas. (This is in reference to areas burned maybe years ago.)
- Look Up and Live
- 19th Situation
- Look Up, Look Down, Look All Around
- Avoid additional mnemonics, we have too many, go with LCES
- Situational Awareness- Keep head in the game
- Avoid or Remove
- After Action Reviews
- Encourage LFTA (Listen For The Alarm)
- Mentoring
- Mid-season reviews
- The ecological and habitat issues are complex, and simplified guidelines may not be appropriate.
- District Hazard Tree Committee to develop:
 - Briefing Card
 - Orientation package
 - Field awareness site
- Stand down day in July to revisit and review
- Look Up, Danger is from above
- **SNAG** = Stop, Notice, Avoid, Generate Mitigation or Get rid of it
- **HAZARD** Identification = Hazard, Alert others working in the area of snags and green tree hazards, Zone: Identify and stay out of the hazard or kill zone. Aggressively Mitigate the Hazard: By ***Eliminating or Avoiding*** it. Make sure everyone knows about the chosen mitigation measures. Reassess the hazard if conditions change

(weather, time of year, stand condition). **Don't Get Complacent:**
hazard trees can strike at any time.

Suggest additional programs, publications and research suggestions:

- Study recent accidents
- Gather statistics on when, and in what conditions, accidents occur (or snags fall)
- Awareness for the public, especially campgrounds, trailheads, and other high visitor use areas.
- Widely distribute the Reserve Tree Guide.
- Demonstrate power of a falling tree (by felling at a target)
- Retire hardhats sooner
- Develop cool slogan that remind people what specifics (i.e. fungus, conchs, root exposure, etc.) to look for
- Develop hazard tree awareness in handbooks, manuals, etc.
- Study what group is actually getting hurt
- Earpiece connected to radio so lookout can communicate with the sawyer. Blinking light, Tag Lines were also mentioned. (So was electric shock...)
- Develop curriculum for recognizing Structure Indicators in diverse forests.
- Teach techniques to confirm structure issues (dig at roots, chip at bark)

A Plausible Hazard Tree Program

In a nut shell:

- 1) Understand and recognize indicators**
- 2) Develop and maintain a toolbox of mitigations**

Taken from the suggestions listed above, and assimilated with prejudices of the author, a responsible and comprehensive hazard tree has the following broad elements:

- Integrates resources across agencies, and disciplines within agencies.
- Focuses and develops “knowledge”, as opposed to policies
- Recognizes that “we do not know what we do not know”, and carefully introduces new employees through classroom and field training, and careful mentoring.
- Success is measured by how well individuals are able to *recognize tree structural indicators*, and their *appropriate response to those indicators*.
- Measure individual’s recognition skills and appropriate responses.
- Develops advanced skills for selected specialists.
- Guidance, reference, and instructional materials are readily available, with consistent language.
- Accommodates a mobile populace, with local knowledge shared with incoming resources and forest visitors.

Success is achieved when wise, concise, and achievable concepts become part of the culture.

Success is achieved when these concepts become regular briefing elements, and is found, in common language, on posters, in manuals, and in guidebooks.

Success is achieved when conscious and deliberate procedures and behaviors end tragic hazard tree accidents.

Conclusion

Up the Ante has proven to be a very credible program, a very responsible anchor point from which to extend. The program remains a strong tool to achieve employee focus and education. It has huge opportunity for continued use. We will leave the e-mail address viable for the next couple years.

The next step may include assigning an interdisciplinary committee to digest the field-generated findings, assign priorities, and begin actualizing these concepts.

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