



Emissions Reduction Techniques (ERTs)

ERT Task Team
September 28, 2005
Missoula, MT

Rationale

Provide a method for integrating ERTs into reporting and emissions inventories AND maintain incentives to managers to apply ERT's.





Challenge

How do we apply ERT calculations consistently across different ecosystems?



Goal of the ERT TT

- Produce spreadsheet (relatively simple) to identify the following w.r.t. each ERT method.
 - Location in EI process.
 - Computational method.
 - Appropriate multiplier (e.g., acreage, tons/acre, percentage reductions, emissions factors).
 - Crude uncertainty level (high, acceptable, or unknown) associated with each computation.

ERT's for Four Vegetation Covers...for now

Grass – Brush – Timber – Crops

**Largely based on work
of National WF
Coordination Group**

ERT – Next Steps (June 05)

- Format/Organization tweaks for the ERT table
 - Addl vegetation types?
 - Logic/layout improvements?
 - Review questions on slide 11.
 - Incorporate Info from smoke mgt guide? (B. Habeck's suggestion)
 - Incorporate comments from AZ burners?
- Fill in the blanks.
- Buckle down and design/produce the deliverable.
- Develop the equations/calc stream for accounting for ERT's applied (& establish the relationship between control efficiency and fuel loadings)...but the ERT TT's deliverable is NOT a calculation tool.

ERT – Next Steps (June 05)

- Put together definitions; clean up table; exec summary (incl note on discretion of burner/SM mgr) and instructions for review (Fitch and Randall); add grouping headers to spreadsheet
- Combine with table and circulate to experts on ERT methods and research re: emissions reductions. 6/30
 - Roger Ottmar; Colin Hardy; Janice Peterson; Sam Sandberg;
- Conf call of experts 7/29 – no attendance
- Revamp of ERT table by Randall/Fitch (8/25-26)
- Conf call of ERT TT 9/1 – reviewed/revised/approved table
- Approval by FEJF at the Sept meeting

Table 1 - ERT Emission Reduction Factors

Emissions Reduction Method	Percent PM2.5 Emission Reduction SOUTHWEST (CA, NV, UT, AZ, NM)							
	Primary Fuel Type							
	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
Pre-Burn Fuel Removal	% rem		% rem		% rem		% rem	
Firewood Sales					% rem			
Mechanical Processing	% rem		% rem		% rem		% rem	
Biomass Utilization (except for Elect Gen)	% rem		% rem		% rem		% rem	
Mosaic Burning	% nb		% nb		% nb			
Ungulates	67%	1						
Burn More Frequently			83%	1				
Underburn Before Litter Fall								
Burn Before Green Up	46%	4					46%	4
Backing Fire (grass, pine needle litter)	67%	2	45%	2	45%	2	50%	3
Maintain fire line intensity (grass, PNL, other)	50%	2	50%	2	50%	2	50%	2
Isolating Fuels					10%	2		
Concentration Burning					70%	2		
Chemical Treatment								
High Moisture in Large Fuels					43%	1		
Moist Litter and Duff					26%	1		
Burn Before Large Activity Fuels Cure					44%	1		
Aerial Ignition/Mass Ignition	10%	1	10%	1	10%	1	10%	1
Rapid Mop-Up			10%	2	10%	2		
Windrow Burning			13%	1	13%	1	13%	1
Pile Burning			70%	2	70%	2	70%	2
Air Curtain Incinerators							85%	3

Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
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Seasonal ERT Suites:							
Spring suite (list ERT's using brief terms)							
Summer suite (list ERTs)							
Fall suite (list ERTs)							
Winter suite (list ERTs)							

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 Emission reduction factor References
- | |
|-------|
| % rem |
|-------|

 Enter % (by mass) of fuel removed due to ERT application
- | |
|------|
| % nb |
|------|

 Enter % of acres not blackened due to ERT application
- | |
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 Emission Reduction Method not applicable to veg type
- | |
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 ERT NEVER/RARELY used in region
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 ERT OCCASSIONALLY used, most approp ERT used
- | |
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 ERT COMMONLY/VERY COMMONLY used, ERT for any veg type used
- | |
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 ERT COMMONLY/VERY COMMONLY used, most approp ERT used

Table 1 - ERT Emission Reduction Factors

Emissions Reduction Method	Percent PM2.5 Emission Reduction NORTHWEST (OR, WA, AK)								Percent PM2.5 Emission Reduction INTERMOUNTAIN WEST (CO, MT, WY, ID)							
	Primary Fuel Type								Primary Fuel Type							
	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
Pre-Burn Fuel Removal	% rem		% rem		% rem		% rem		% rem		% rem		% rem		% rem	
Firewood Sales					% rem								% rem			
Mechanical Processing	% rem		% rem		% rem		% rem		% rem		% rem		% rem		% rem	
Biomass Utilization (except for Elect Gen)	% rem		% rem		% rem		% rem		% rem		% rem		% rem		% rem	
Mosaic Burning	% nb		% nb		% nb				% nb		% nb		% nb			
Ungulates	67%	1							67%	1	67%	1	67%	1	67%	1
Burn More Frequently			83%	1					83%	1	83%	1	83%	1		
Underburn Before Litter Fall																
Burn Before Green Up	46%	4					46%	4	46%	4					46%	4
Backing Fire (grass, pine needle litter)	67%	2	45%	2	45%	2	50%	3	67%	2	45%	2	45%	2	50%	3
Maintain fire line intensity (grass, PNL, other)	50%	2	50%	2	50%	2	50%	2	50%	2	50%	2	50%	2	50%	2
Isolating Fuels					10%	2							10%	1		
Concentration Burning			70%	2	70%	2					70%	2	70%	2	70%	2
Chemical Treatment																
High Moisture in Large Fuels					43%	1							43%	1		
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Rapid Mop-Up			10%	2	10%	2					10%	2	10%	2		
Windrow Burning			13%	1	13%	1	13%	1			13%	1	13%	1	13%	1
Pile Burning			70%	2	70%	2	70%	2			70%	2	70%	2	70%	2
Air Curtain Incinerators							85%	3							85%	3

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Next Steps (Sept 05)

- J. Russell to propose seasonal suites of ERT's and estimates of emission reduction credit.
- Prepare glossary/definitions of ERTs (Randall & Fitch).
- Incorporate comments/suggestions from FEJF at Sept 28-29, 2005 meeting.
- FEJF Review & Approval.
- Distribution to smoke management programs.
- Tie in ERT TT work with application of ERT's in Ph III/IV work (for projections and calculation tool).
 - Develop text for workplan.

Discussion



September 26, 2005

LEIT Task Team