

Compact Winter Meeting Jan 24, 2012
South Portland, Maine

Stress Testing Project Update



Lloyd C. Irland
The Irland Group



Outline

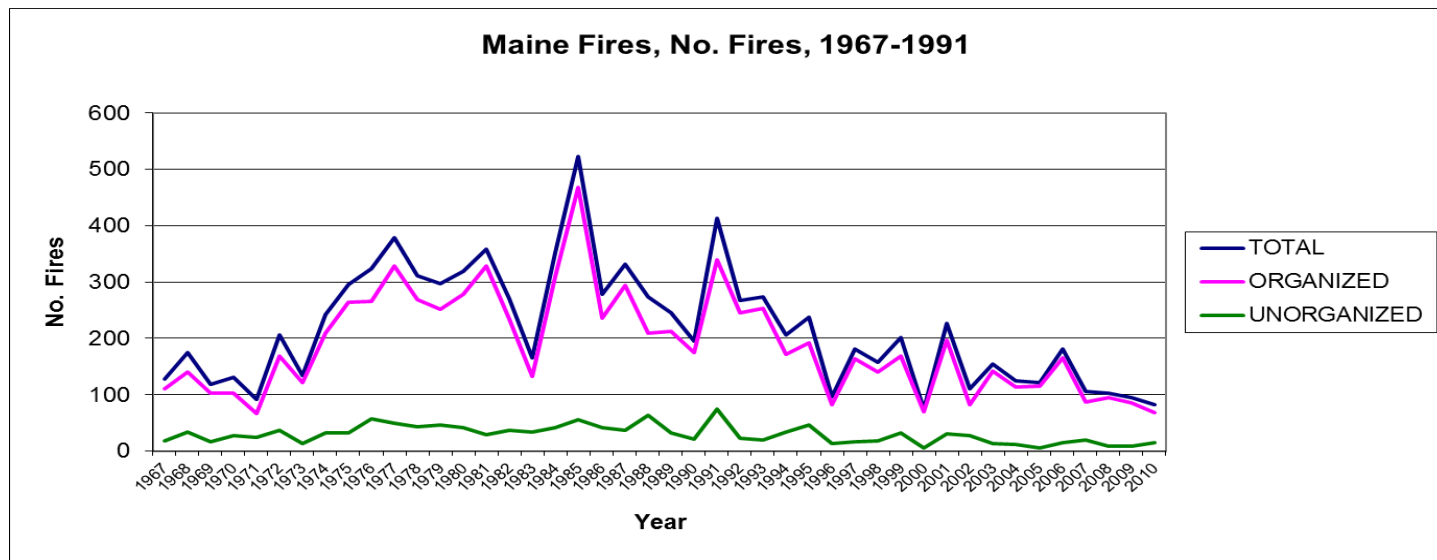
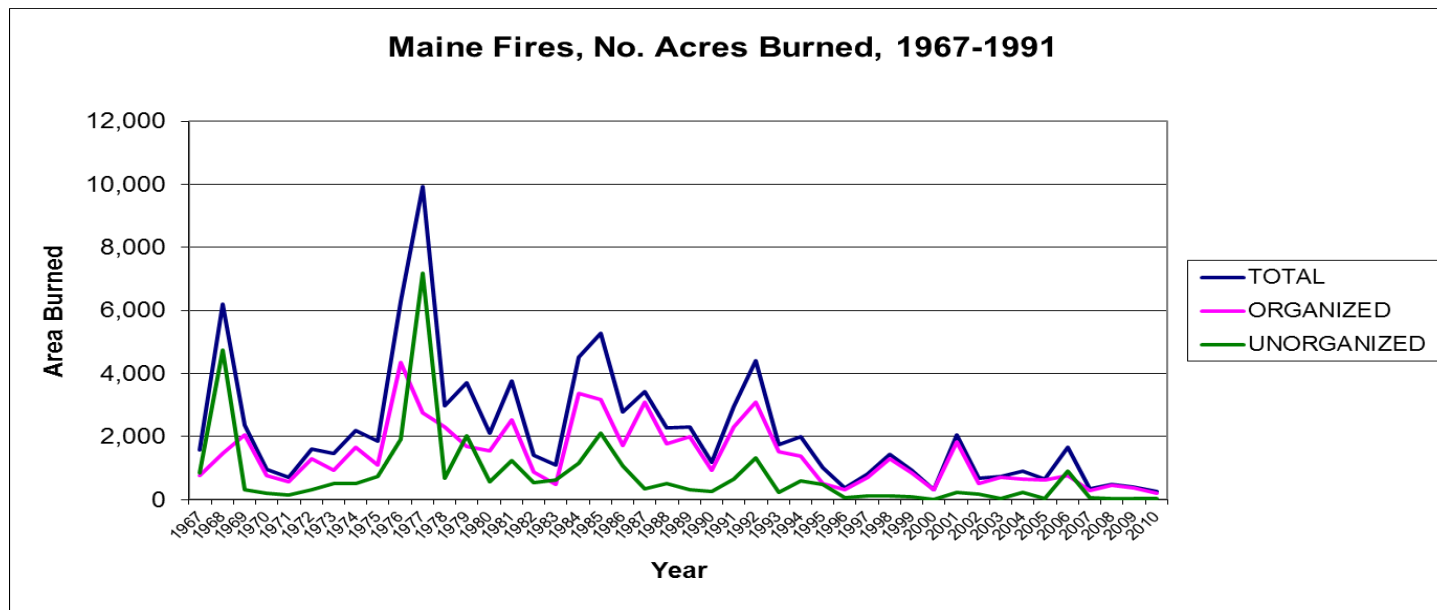
- Recent Activities
- Uses of Individ. Fire databases
- Questions
- Resources & Costs
- Plans

Recent Activities

- Trip to Sopfeu in Quebec
- Detailed Analysis of Maine indiv Fire DB
- Completed E. Canada longterm Fire history, based on data from Jurisdictions
- Interviewed “Peanut” Gardner, vet of ‘47 fire, E. Machias

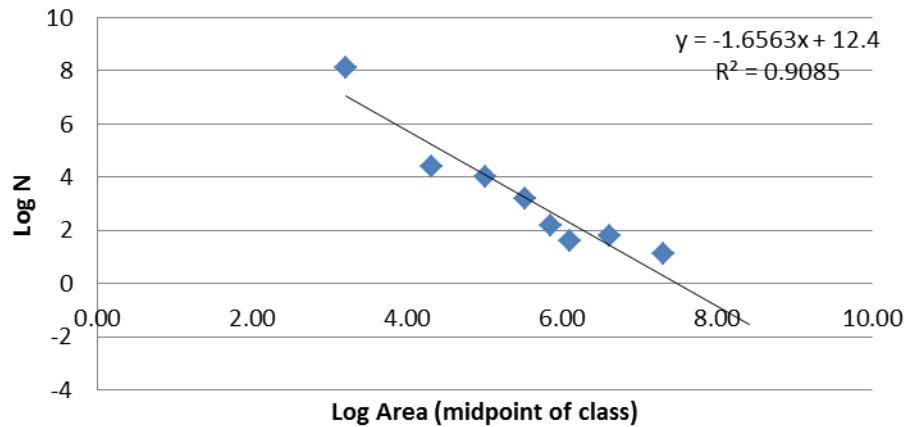
Individual Fire Databases

- Maine: 1967- 2010 > 1 acre, and < 1 A.
- Quebec: 1991- 2010 above 1 acre
- Vermont : 1913 to 1935; 1977-1998
- Nova Scotia: 1987-2009
- Newfoundland: 1999, 2000, 2009
- Welcome other states, even shorter data periods - need NY or So. New England

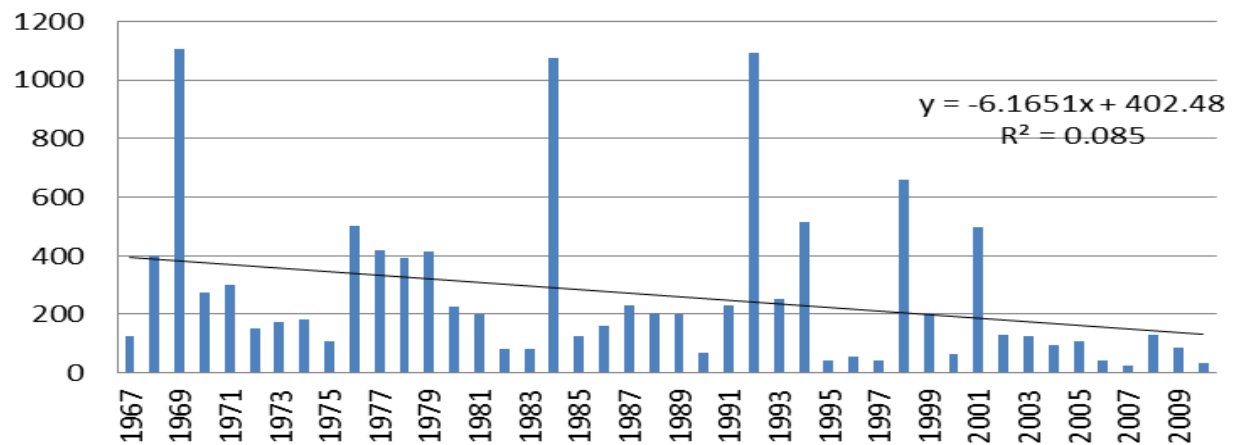


Things we can do with Individual Fire Data: Maine for an example

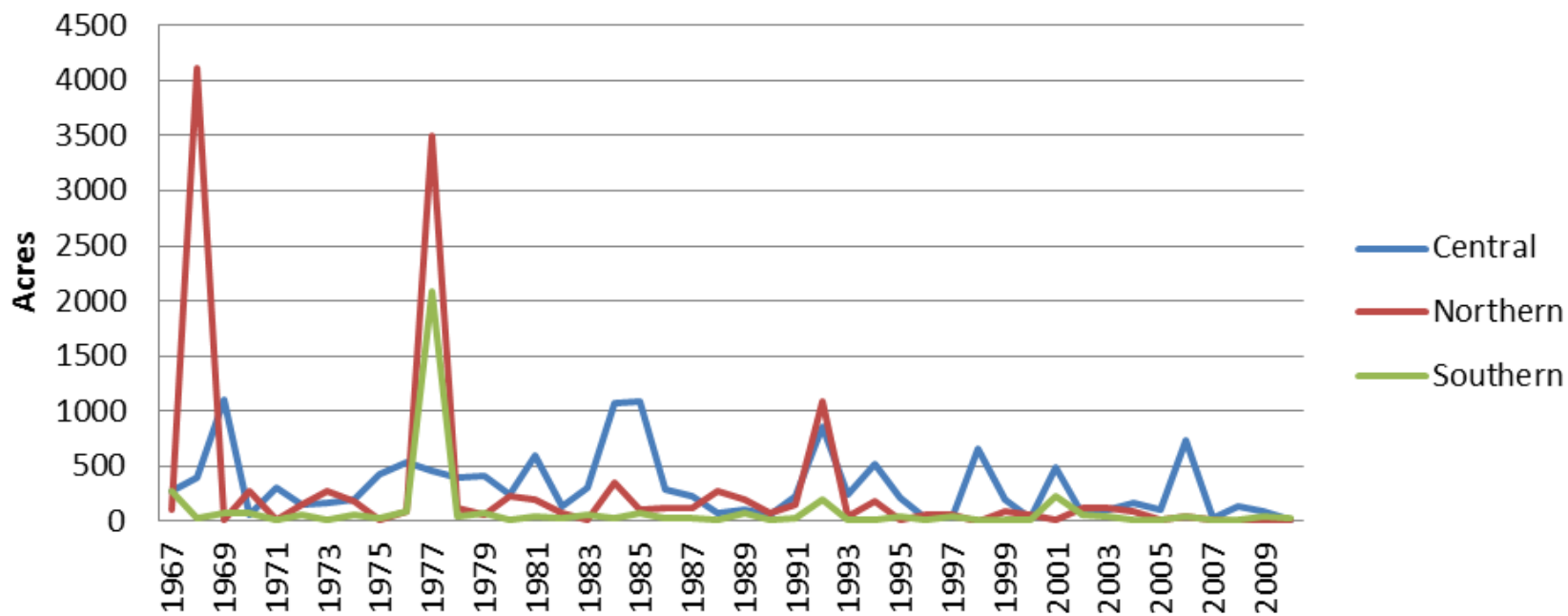
Fires >1 A, 1967-2010, Central Maine Log Log Plot



Largest Fire, Organized Towns, Maine 1967-2010



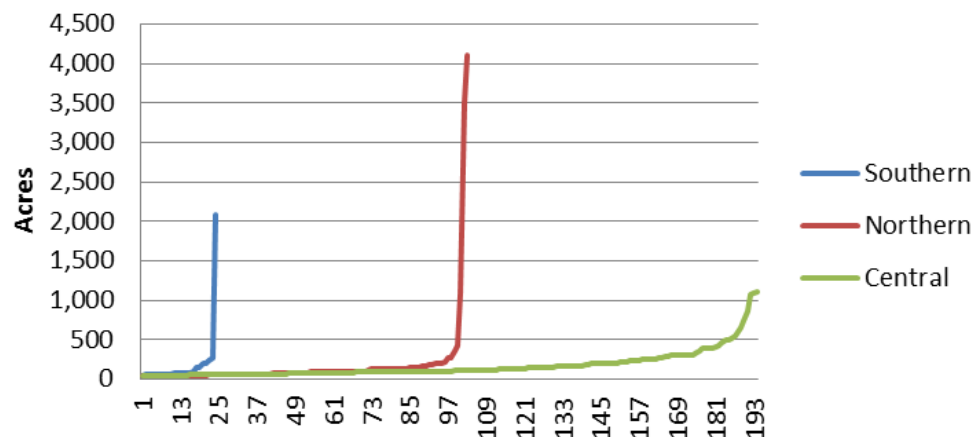
Largest Fires by MFS Region 1967-2010



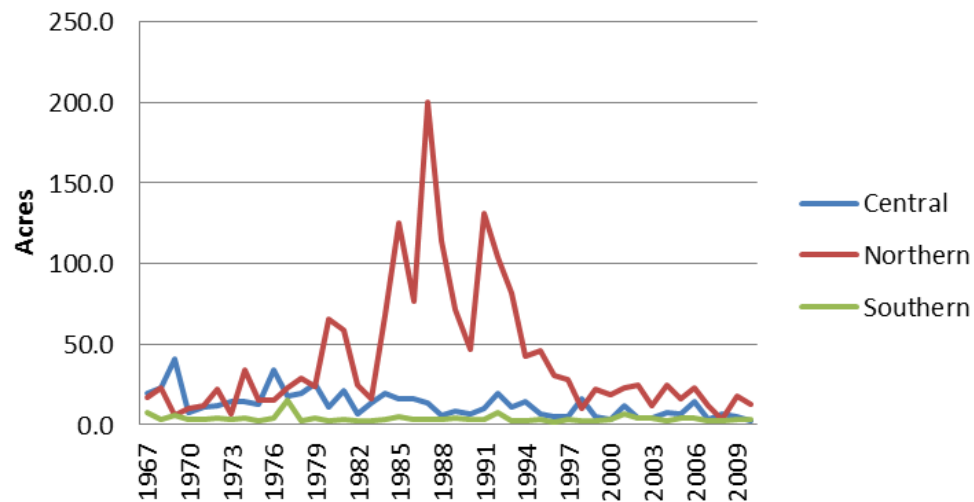
Maine fires above 50 A: By Cause and decade

TOTAL	1981-1990			TOTAL	2000-2010		
	Average				Average		
Cause	Fire Size	No. Fires	%	Cause	Fire Size	No. Fires	%
Grand Total	129.51	112		Grand Total	142.84	23	
INCEN	143.24	65	58%	DEB	219.48	8	35%
DEB	94.67	34	30%	INCEN	99.64	5	22%
LIGHT	169.70	6	5%	MACH	95.27	3	13%
RR	184.38	2	2%	RR	80.33	3	13%
SMOKE	69.25	2	2%	CAMP	94.25	2	9%
CHILD	50.00	1	1%	CHILD	236.10	1	4%
MACH	120.00	1	1%	SMOKE	80.00	1	4%
MISC	280.00	1	1%	LIGHT	0.00	0	0%
CAMP	0	0	0%	MISC	0.00	0	0%

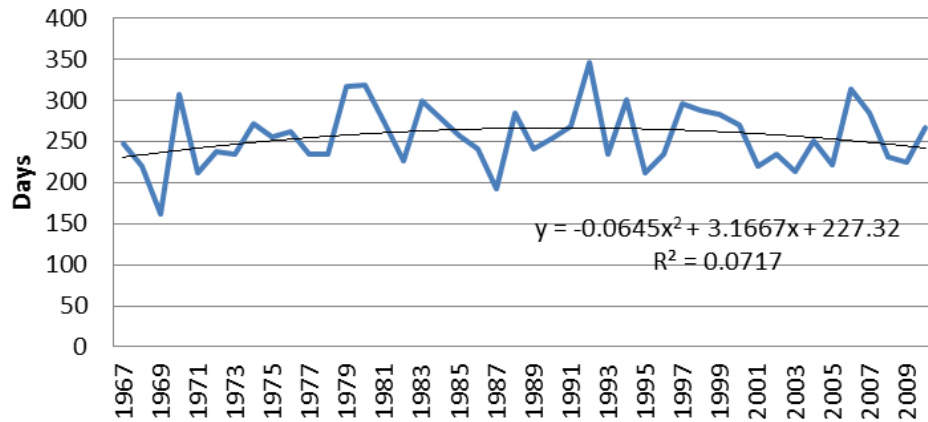
Size distributions, fires > 50 A, by Region



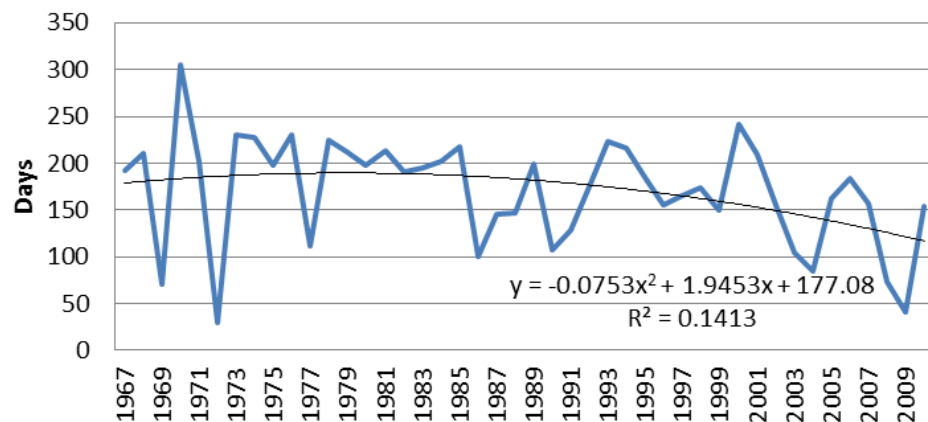
Average Fire Sizes, 3 MFS Regions



Maine fire season, Fires > 1 A. Organized Towns, 1967-2010



Fires Season, Unorganized, Fires > 1 A. 1967-2010



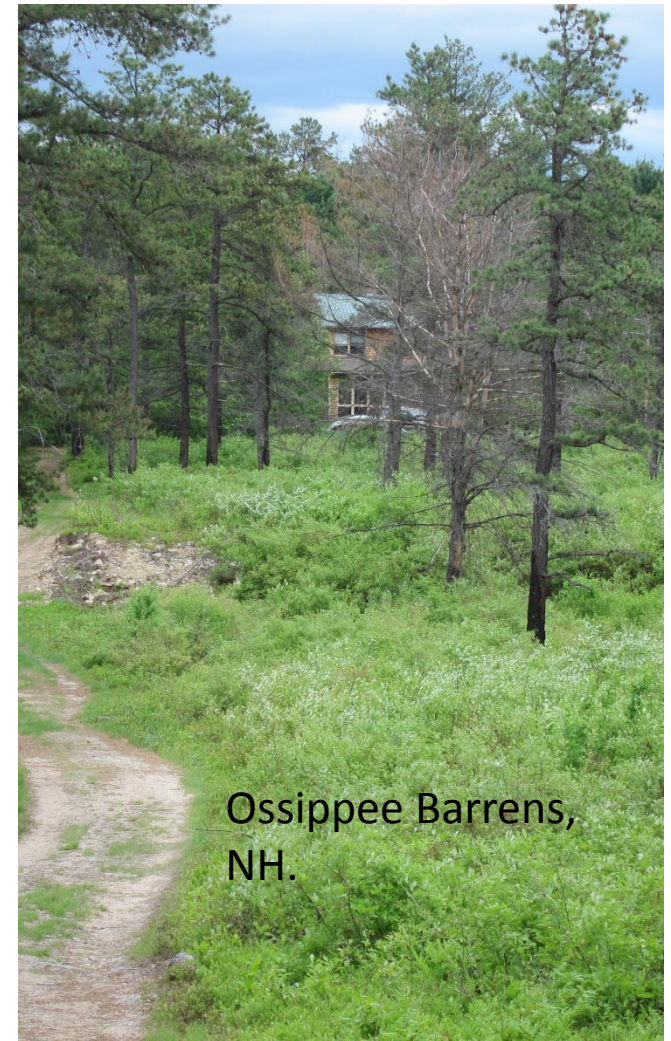
Question:

What is a reasonable def. Of "Fire Season?"

- First & last fire?
- First one acre fire?
- First day w > 1 fire?
- Something else?
- Or, a weather or FDI definition?

Questions

- Are we out of the era of large fires?
- Relative role of weather, compliance, official commo, cellphones, suppression, etc?
- How are fuels changing?
- Interface?
 - See Potential Univ Wisconsin study (V. Radeloff)
 - See fabulous maps, state by state, at:
<http://silvis.forest.wisc.edu/old/maps.php>
 - Other sensitive infrastructure (power lines?)



Ossippee Barrens,
NH.

Effect of Policy and Control Action

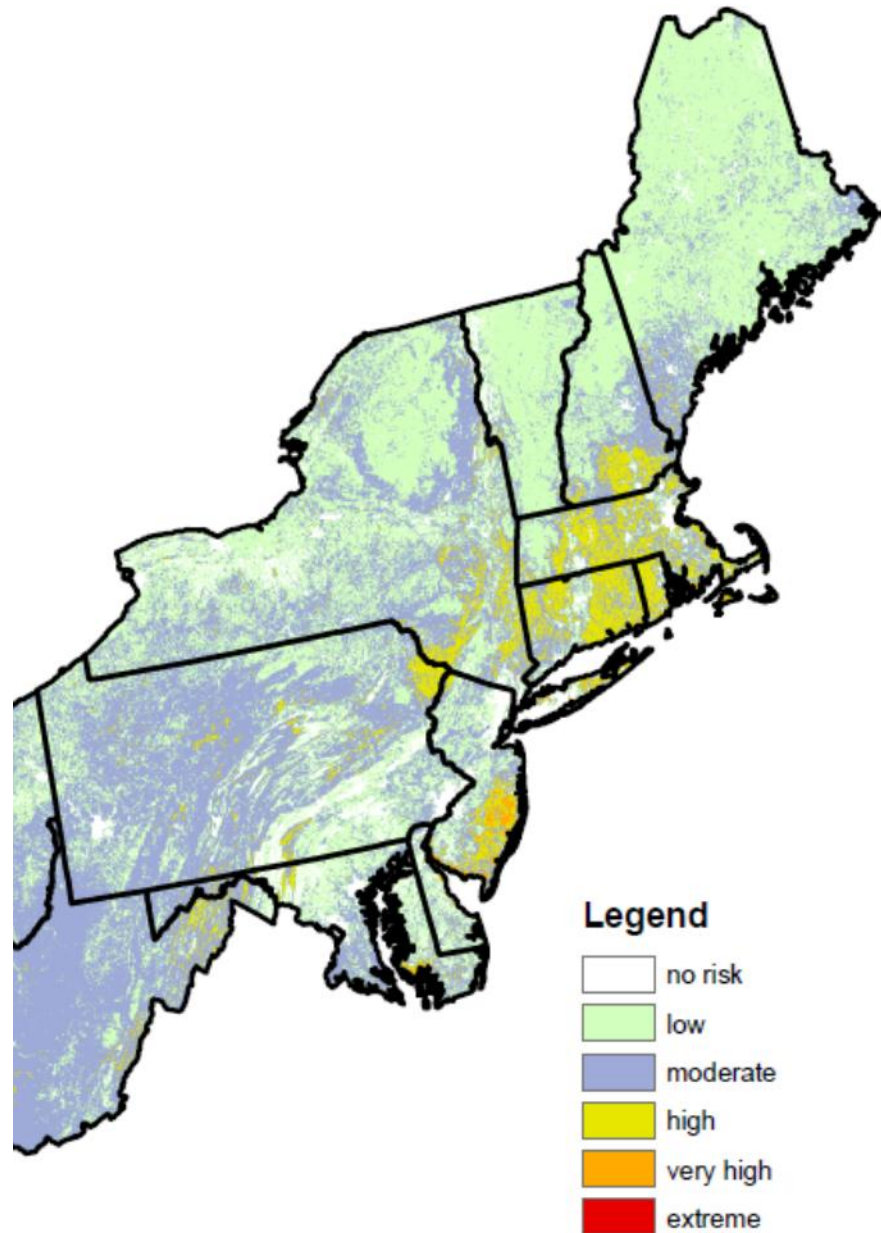
- Reports elsewhere support an effect
- Anecdotes of seasons of difficult weather, high FDI, but few fires reaching large sizes support strong effect.
 - Woods closures; swift detection/suppression
- We need more of these examples.
- Is there a “natural experiment” that can support this??
 - Relation between FSD and response times?

NA Risk

Assessment

[At this web address is document outlining how this map is developed:](http://www.na.fs.fed.us/fire/pubs/northeast_wildfire_risk_assess10_lr.pdf)
[http://www.na.fs.fed.us/fire/pubs/northeast wildfire risk assess10 lr.pdf](http://www.na.fs.fed.us/fire/pubs/northeast_wildfire_risk_assess10_lr.pdf)

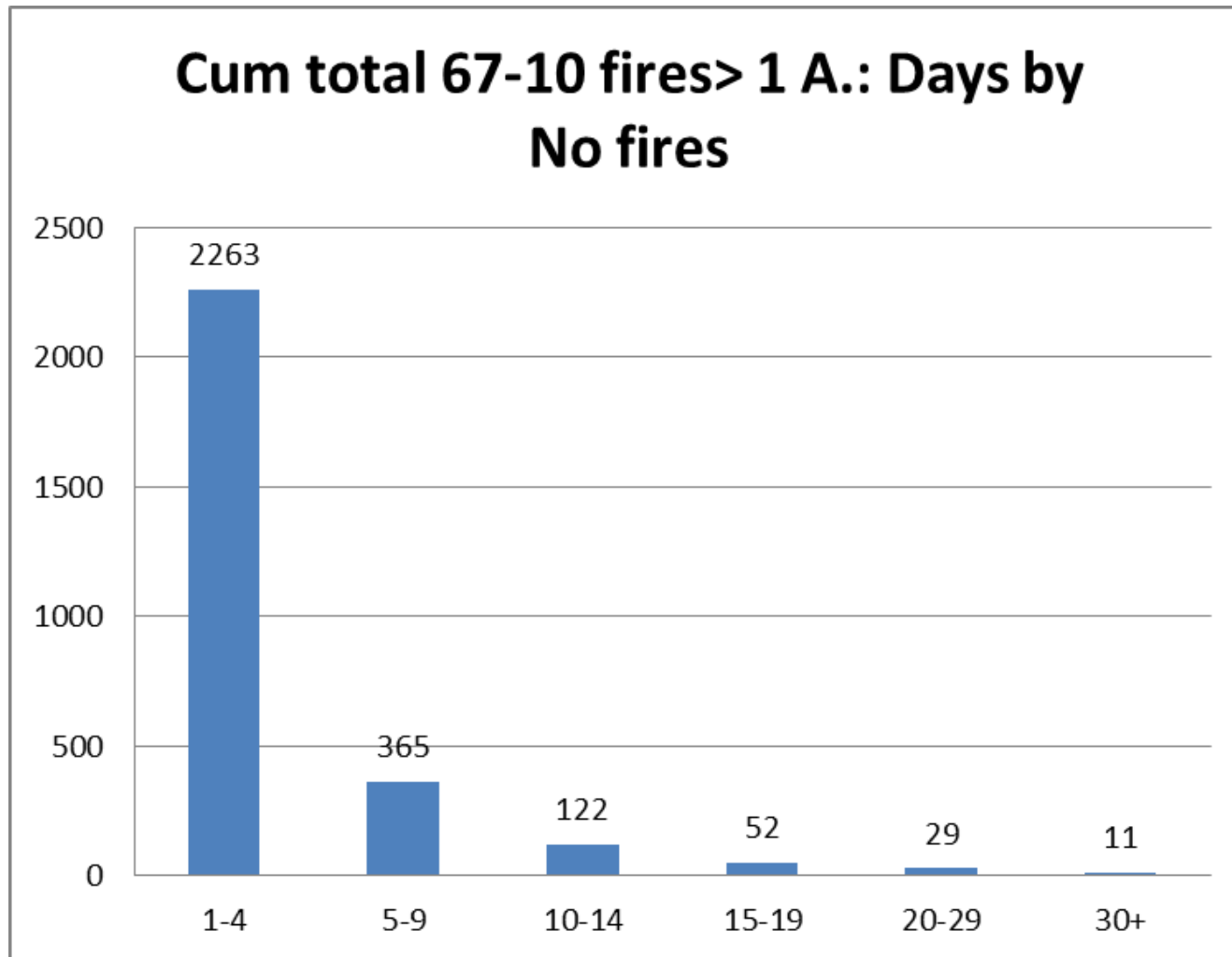
Thanks to Erin
Lane, USFS.



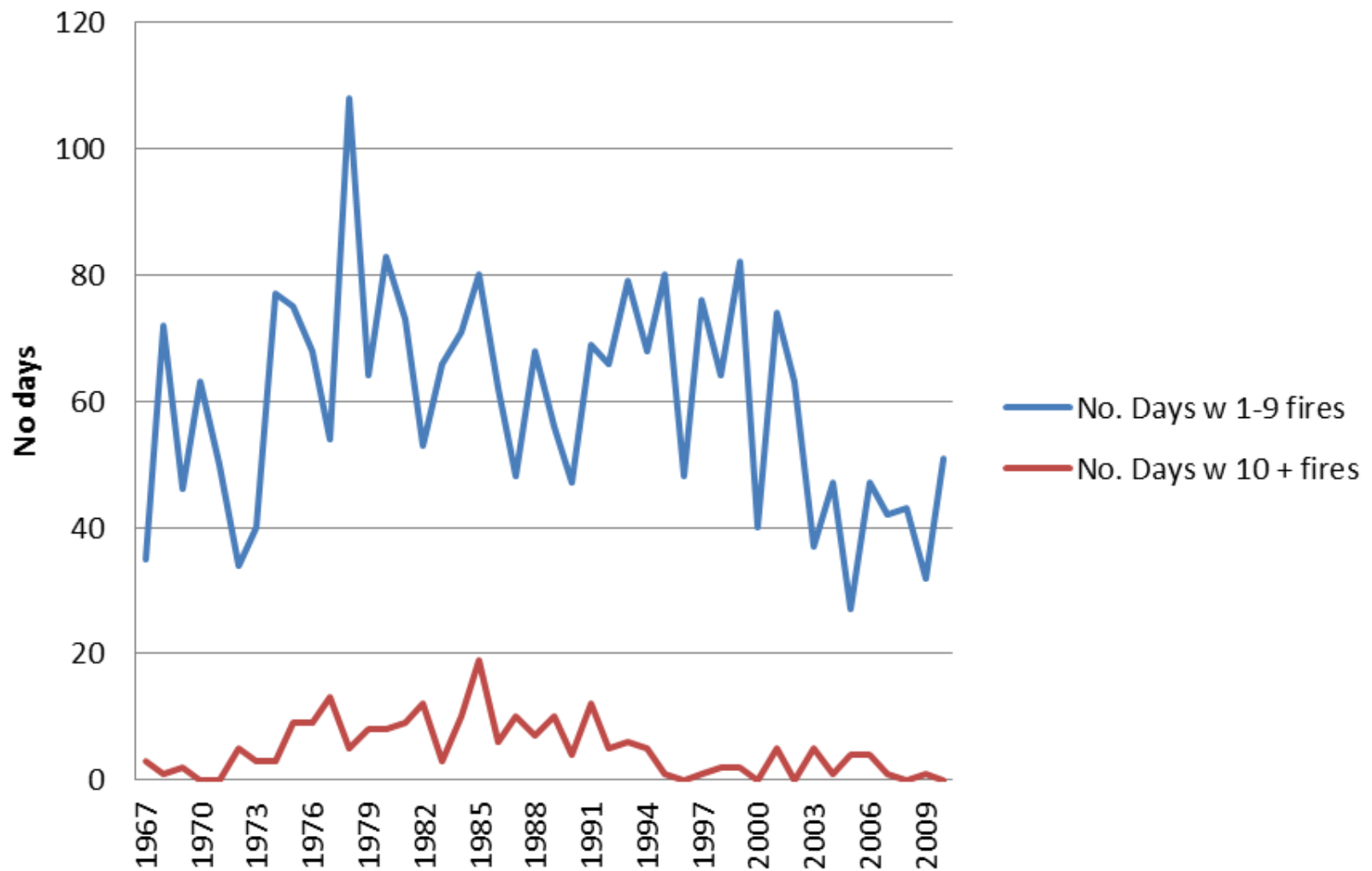
Resource Limits: Tentative Conclusion

- No simple numerical indicator of “Maximum Capacity” exists.
 - Depends on judgments about Outlook
- So, I propose we simply decide, “Resources are maxed out when the responsible managers say they are”.
- Analyze Compact & CFFC data

Proxy for Stress: Fires per Day



No. Days by No. fires: summary

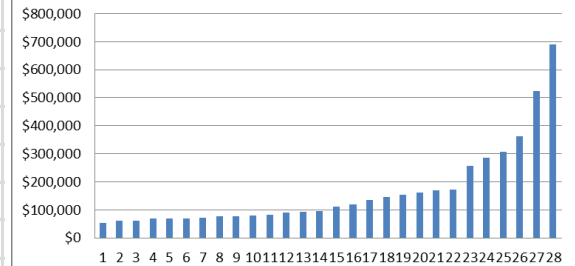


Quick Look at Costs

Maine Fires > \$50K, 1967-2010, NOT adjusted for inflation

Town	Cty	Mo	Yr	Cause	TCOST	Area
T15 R05 WELS	AROOSTOOK	07	1995	LIGHT	\$52,757	17
T17 R03 WELS	AROOSTOOK	07	1997	MACH	\$60,773	65
Edmunds TWP	WASHINGTON	05	2001	SMOKE	\$61,129	80
Northport	WALDO	05	2001	DEB	\$67,958	77
Bucksport	HANCOCK	05	2001	DEB	\$68,650	22
Grindstone TWP	PENOBSCOT	05	1986	RR	\$70,150	299
RAINBOW TWP	PISCATAQUIS	07	1995	LIGHT	\$70,794	16
T26 ED BPP	WASHINGTON	08	1987	LIGHT	\$76,014	50
Milo	PISCATAQUIS	05	2002	MACH	\$76,795	4
EAST MACHIAS	WASHINGTON	08	1978	MACH	\$80,807	391
PARLIN POND TWP	SOMERSET	05	1992	MACH	\$82,923	198
Dixfield	OXFORD	05	2002	CHILD	\$90,339	9
WINTERPORT	WALDO	09	1995	MACH	\$91,492	16
Steuben	WASHINGTON	04	1999	DEB	\$96,495	205
T04 R08 Wels	PENOBSCOT	08	2002	LIGHT	\$112,432	25
Robbinston	WASHINGTON	07	2008	CAMP	\$119,199	131
T04 R13 WELS	PISCATAQUIS	07	1981	LIGHT	\$134,799	282
T30 MD BPP	WASHINGTON	06	1986	INCEN	\$146,505	164
Moxie Gore	SOMERSET	05	1977	LIGHT	\$153,334	2,092
T04 R12 WELS	PISCATAQUIS	06	1983	LIGHT	\$160,358	307
Shawtown Twp	PISCATAQUIS	09	2002	INCEN	\$169,641	67
T24 MD BPP	WASHINGTON	08	1995	LIGHT	\$171,156	215
T04 R12 WELS	PISCATAQUIS	06	1992	SMOKE	\$257,904	856
Baileyville	WASHINGTON	08	1998	LIGHT	\$286,668	196
GARFIELD PLT	AROOSTOOK	07	1991	INCEN	\$305,594	148
EDMUNDS TWP	WASHINGTON	04	1985	INCEN	\$362,048	1,086
ALLAGASH	AROOSTOOK	05	1992	DEB	\$522,856	1,092
T03 R10 WELS	PISCATAQUIS	07	1977	LIGHT	\$691,304	3,500

Maine fires Costing > \$50K, 67-2010
Not adjusted for inflation



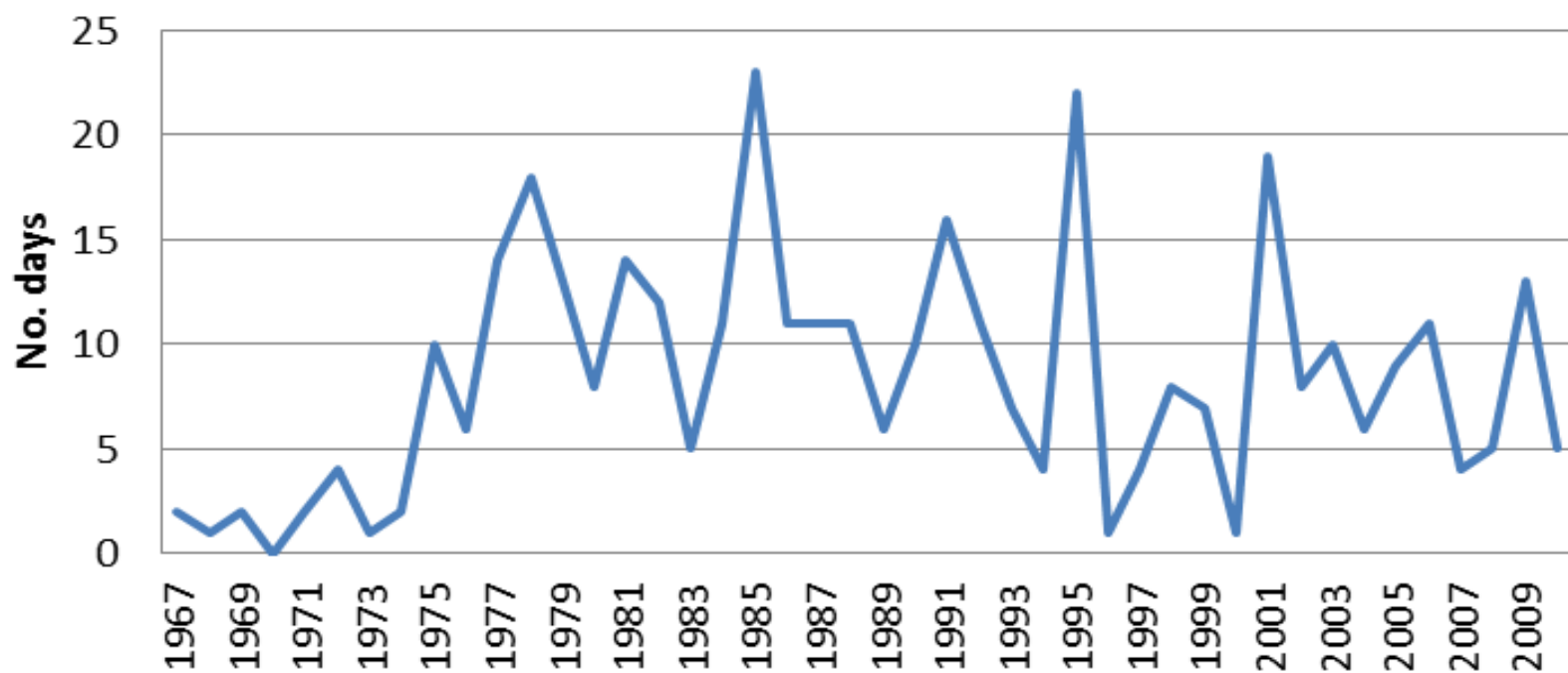
Notes:

- a) Extreme value behavior
- b) 7 fires < 25 A made the list!
- c) 12 in July & Aug

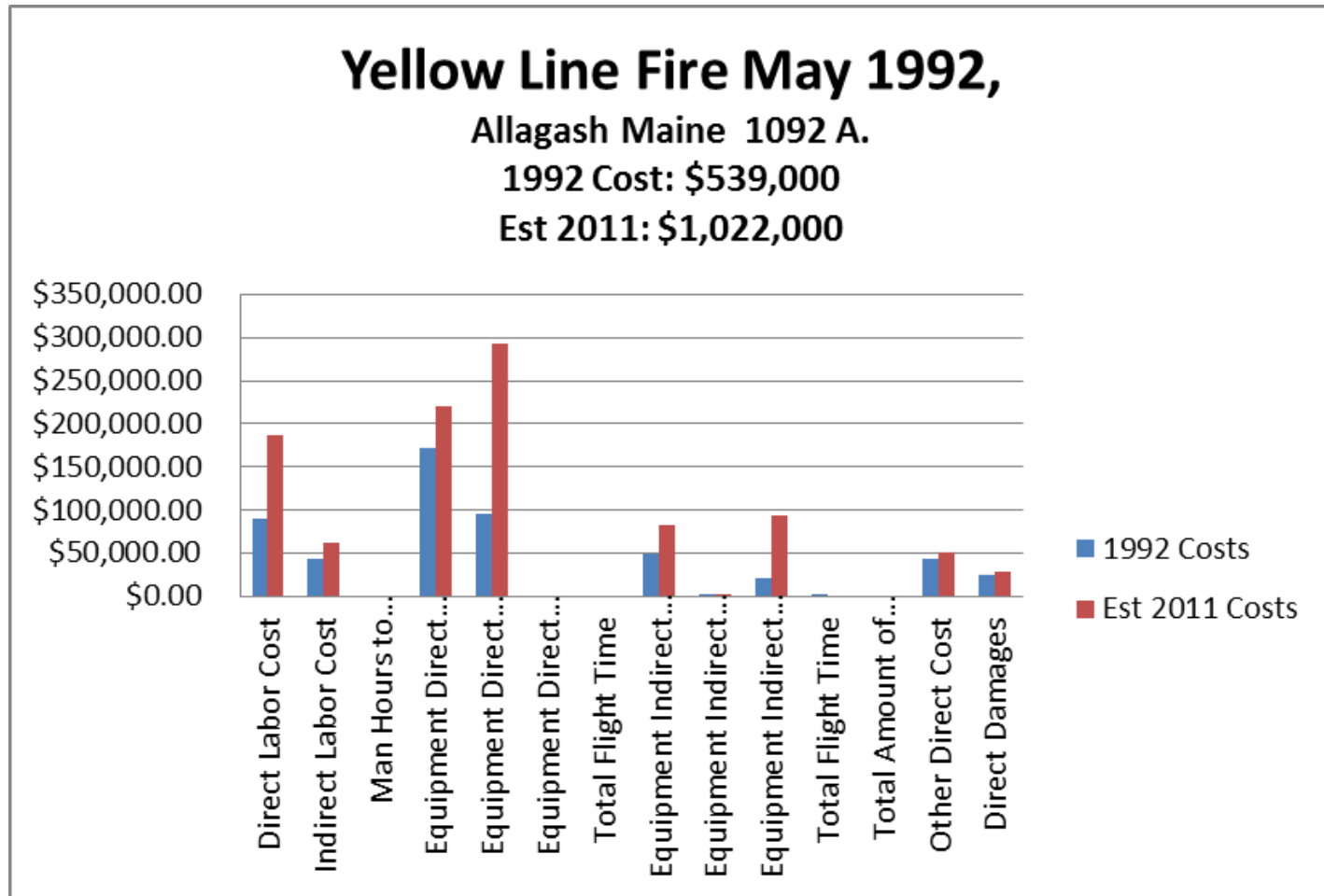
Don't forget the "small" ones....

Top Ten fires in Cost, 1967-2010 smaller than 1 Acre						
Town		County	Date	Cause	TCOST	Area
Trout Brook TWP	U	PISCATAQUIS	8/2/1998	LIGHT	\$8,918	0.5
Rumford	O	OXFORD	10/29/2002	INCEN	\$9,100	0.3
TB R10 Wels	U	PISCATAQUIS	8/24/2002	LIGHT	\$9,134	0.1
T05 R12 WELS	U	PISCATAQUIS	6/26/1988	LIGHT	\$9,267	0.2
Baileyville	O	WASHINGTON	7/23/1999	LIGHT	\$9,670	0.3
BROOKLIN	O	HANCOCK	4/29/1989	DEB	\$9,901	0.5
T03 R10 Wels	U	PISCATAQUIS	10/6/2007	LIGHT	\$13,329	0.1
Lincoln	O	PENOBSCOT	5/31/2010	MACH	\$15,636	0.8
ASHLAND	O	AROOSTOOK	7/19/1991	CAMP	\$32,275	0.3
BATH	O	SAGADAHOC	4/13/1991	DEB	\$70,063	0.1

Maine fires < 1 A: No Days with 10 or more (n=18,179)



Cost Inflation



Robby Gross, MFS

Next Steps

- Complete Data acquisition on Resources/Constraints
- Update/revise Working Papers
- Develop Tentative Worst Case Scenario
- Outline a Proposed Compact White Paper
- Continue Outreach Writings
 - Website for working papers/data
- Develop Completion Schedule