Wildland Fire in Ecosystems--

Fire and nonnative invasive plants

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Thank you:

Joint Fire Science Program

All our Partners

Wildland Fire in Ecosystems

1. Fire Effects on Fauna
2. Fire Effects on Flora
3. Fire Effects on Cultural & Archaeological Resources
4. Fire Effects on Soils and Water
5. Fire Effects on Air
6. Fire and Nonnative Invasive Plants

Objectives

1. Synthesize scientific knowledge about fire & nonnative invasive plants

2. For each bioregion:

   ~ Describe species & plant communities of greatest concern

   ~ Discuss emerging issues

Audience: Managers

Literature Review

Get to the primary source:

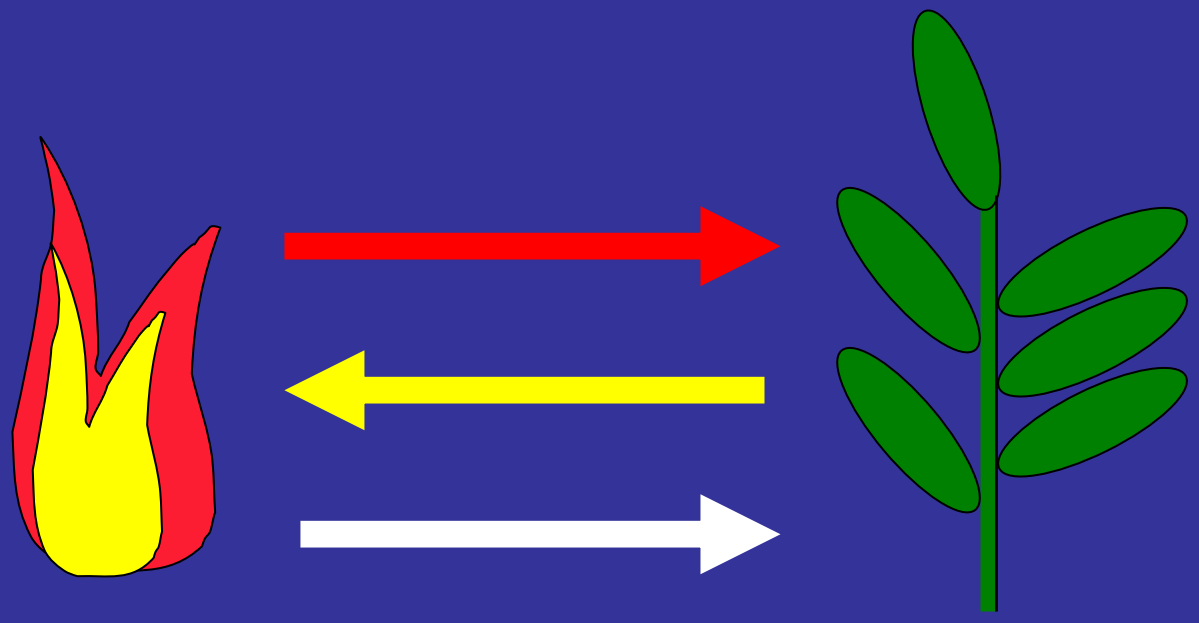
So much is based on so little.

The hedges are there for a reason.

Scientists, use hedges.

Managers, think about them.

Part I. Concepts

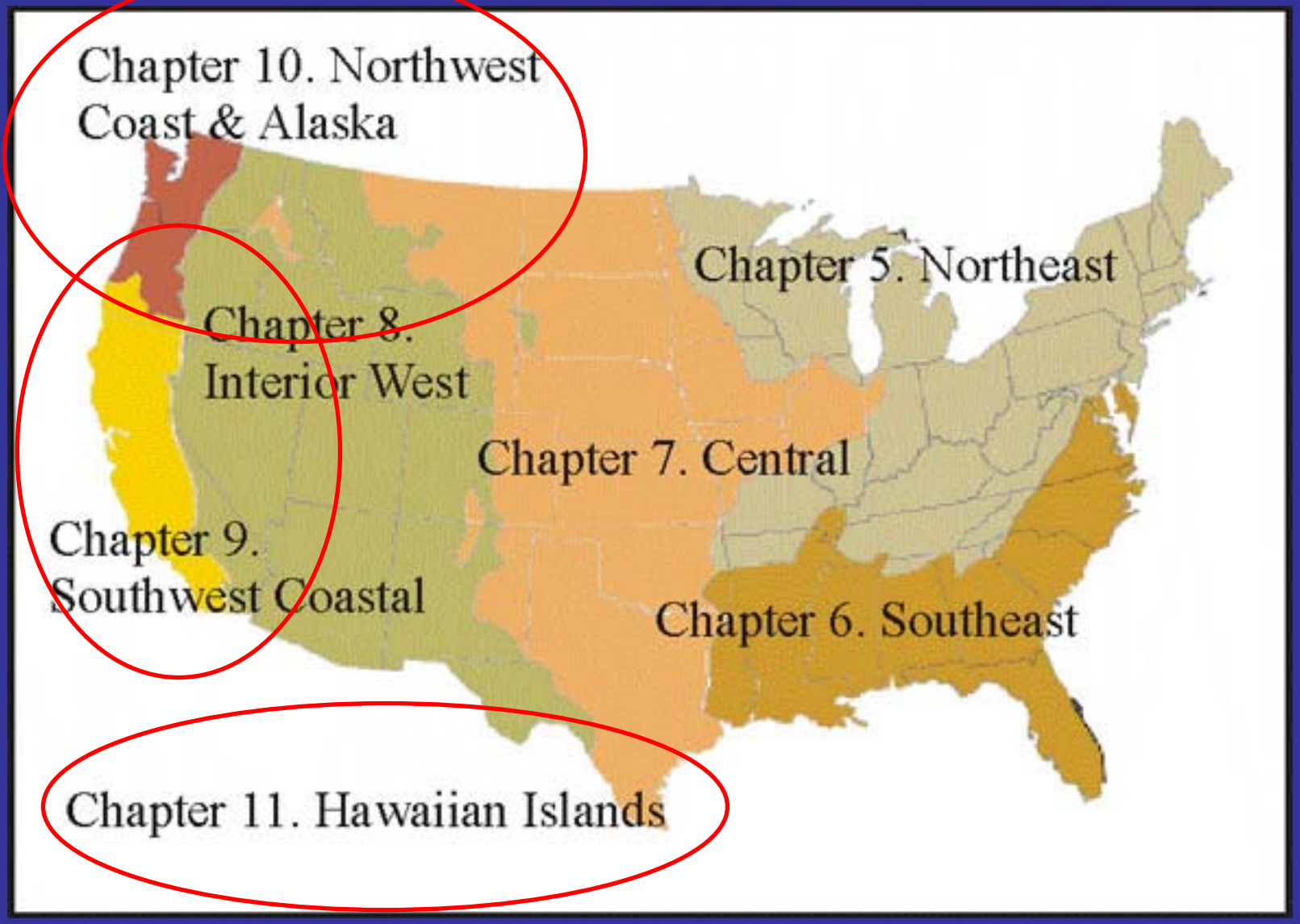


Chap. 2

Chap. 3

Chap. 4

Part II. Bioregional Issues



Central Bioregion (subset of columns & rows)

		Mesic tallgrass prairie subregion	
Species			
Sci. name	**Common name**	**Northern & Central Tallgrass Prairie**	**Southern Tallgrass Prairie**
Arundo donax	giant reed	N	N
Bothriochloa ischaemum	yellow bluestem	P	H
Bothriochloa bladhii	Caucasian bluestem	H	H
Bromus inermis	smooth brome	H	N
Bromus japonicus	Japanese brome	N	N
Bromus tectorum	cheatgrass	N	N
Centaurea spp.	knapweeds	L	N
Cirsium arvense	Canada thistle	H	L

Part III. Emerging Issues

12. Patterns in knowledge gaps
13. Fuel reduction treatments
14. Post-wildfire emergency stabilization & rehabilitation
15. Monitoring strategies
16. Closeout Discussion

Common Language – Invasive

A species that

1. Establishes in a plant community

2. Persists

3. Spreads

… and causes ecological harm

(Westbrooks 1998, Randall 1997)

John M. Randall, The Nature Conservancy

Common Language – Invasibility

Susceptibility of plant community to invasion

John M. Randall, The Nature Conservancy

(Davis et al. 2000, Howard et al. 2004, Lonsdale 1999, Smith & others 2004, Williamson 1996)

Invasive ----- Invasibility

John M. Randall,
The Nature Conservancy

Photo: Steve Smith

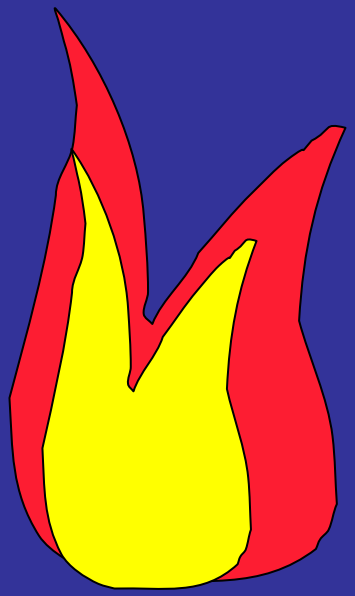
Int. West

		Sagebrush
Bromus tectorum	cheat grass	**H**

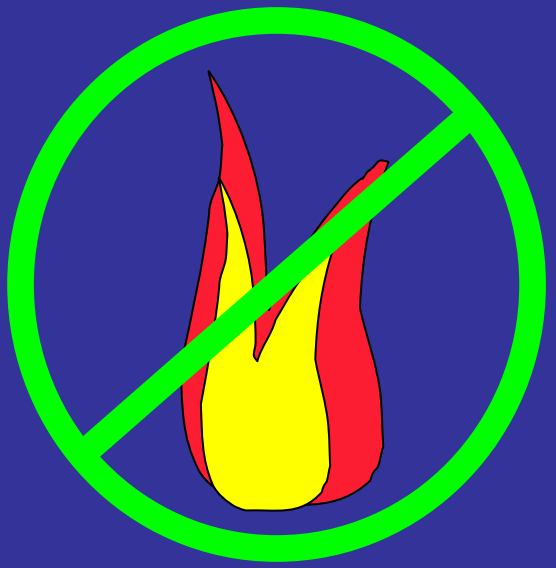
		Int. West	-----Central-----				
		Sagebrush	Mesic tallgrass	N. Mixed prairie	S. Mixed prairie	Shortgr. steppe	Riparian
Bromus tectorum	cheat grass	**H**	**N**	**P**	**P**	**H**	**N**

Common Language – Fire Regime

1. Type
2. Frequency
3. Intensity
4. Severity
5. Size
6. Spatial complexity
7. Seasonality



VS.



(Sugihara and others 2007)