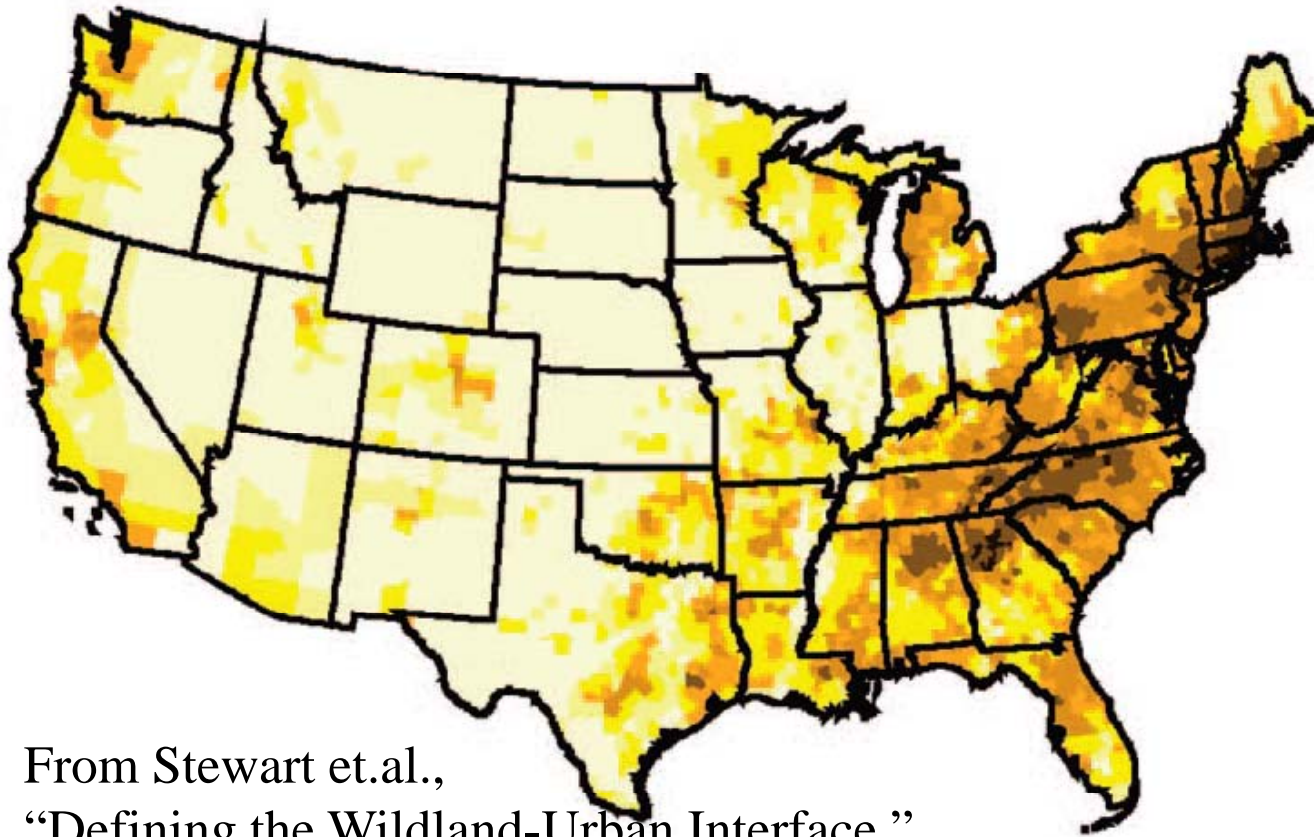


Some Key US/Aust Interface Fire Research Issues

- What & where is the problem? See Stewart et.al. (“Defining the WUI” J. of For. June 2007)
- Interface Fire Risk vs. Hazard.
- Building survival potential after building ignition?
- Building survival potential with direct flame contact exposure?
- Role of building-to-building fire spread (flames & embers) during interface disasters?
- Can massive fire suppression response significantly mitigate disastrous interface fire spread?

Total WUI



From Stewart et.al.,
“Defining the Wildland-Urban Interface.”
J. of Forestry June 2007




Where is
the
Problem
???????

Distribution of
WUI area and
housing units.
% of county
(area) “in” the
WUI.

Risk of Interface Fire Loss

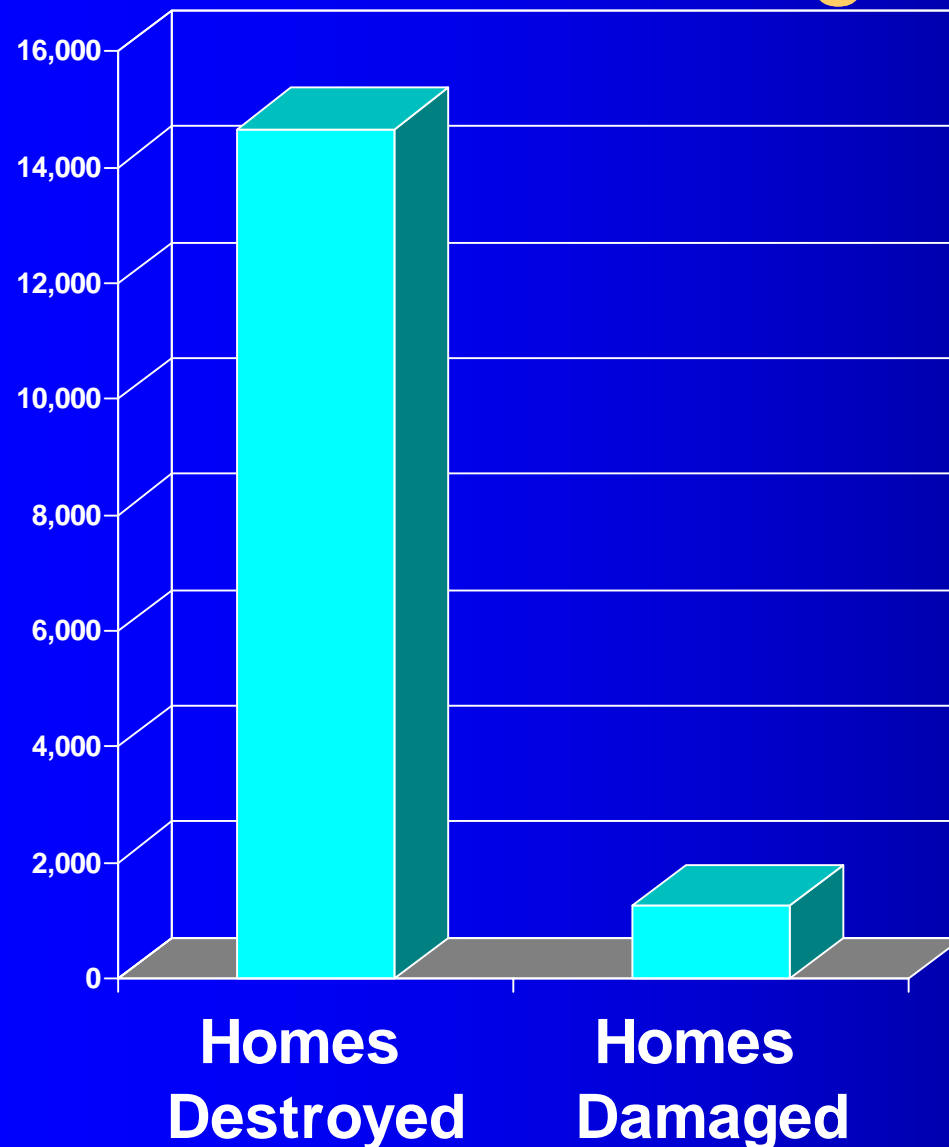
- Risk of Interface Loss (Daily/Annually/100-year)
- Maine vs. Malibu vs. Mobile
- J. of Forestry “Defining the WUI”
- Foehn Winds (Santa Ana, North, Diablo)
- SF Bay Area: 1923, 1970, 1991



SPC DAY1 FIRE WX OUTLOOK
ISSUED: 0856Z 11/14/2008
VALID: 14/1200Z-15/1200Z
FORECASTER: SMITH
National Weather Service
Storm Prediction Center Norman, Oklahoma

 Critical Area
 Critical Area - Dry Tstm
 Extremely Critical Area
Surface Analysis Valid 00Z (Courtesy HPC)

California Interface Loss due to Conflagrations?



Once ignited, 90% of homes on interface fires are completely destroyed.

- Cursory survey of 253 interface fires from 1923 thru 2004 with a total of 22,837 structures burned.

Surviving Direct Flame Contact



Figure 1. This photograph shows flame penetration through a 2-inch diameter soffit vent located in the center of the wall, as viewed from what would be the interior of a structure. The flame impingement exposure simulates burning vegetation or exterior cladding.

Interface Fire Spread

- Heat Transfer
- House-to-House
- ROS (houses)
- ROS (vegetation)
- Fire Intensity
- Duration
- Disastrous Loss?
- Interface Fire?

Melody Lane Fire

July 27, 2004

The Interface Fire Problem

“In its simplest terms, the fire interface is any point where the fuel feeding a wildfire changes from natural (wildland) to man-made (urban) fuel.”

Clay Butler, SRI
Fire Prevention Notes, 1976
California Department of Forestry

Common Elements of the Problem

THE URBAN/WILDLAND FIRE INTERFACE

By C. P. Butler, Senior Fellow
California Academy of Science
San Francisco, California

- Vegetation fire under extreme conditions:
- Exterior fire exposure to buildings:
- Rapid fire spread to ignitable buildings.
- Fire department resources overwhelmed.

