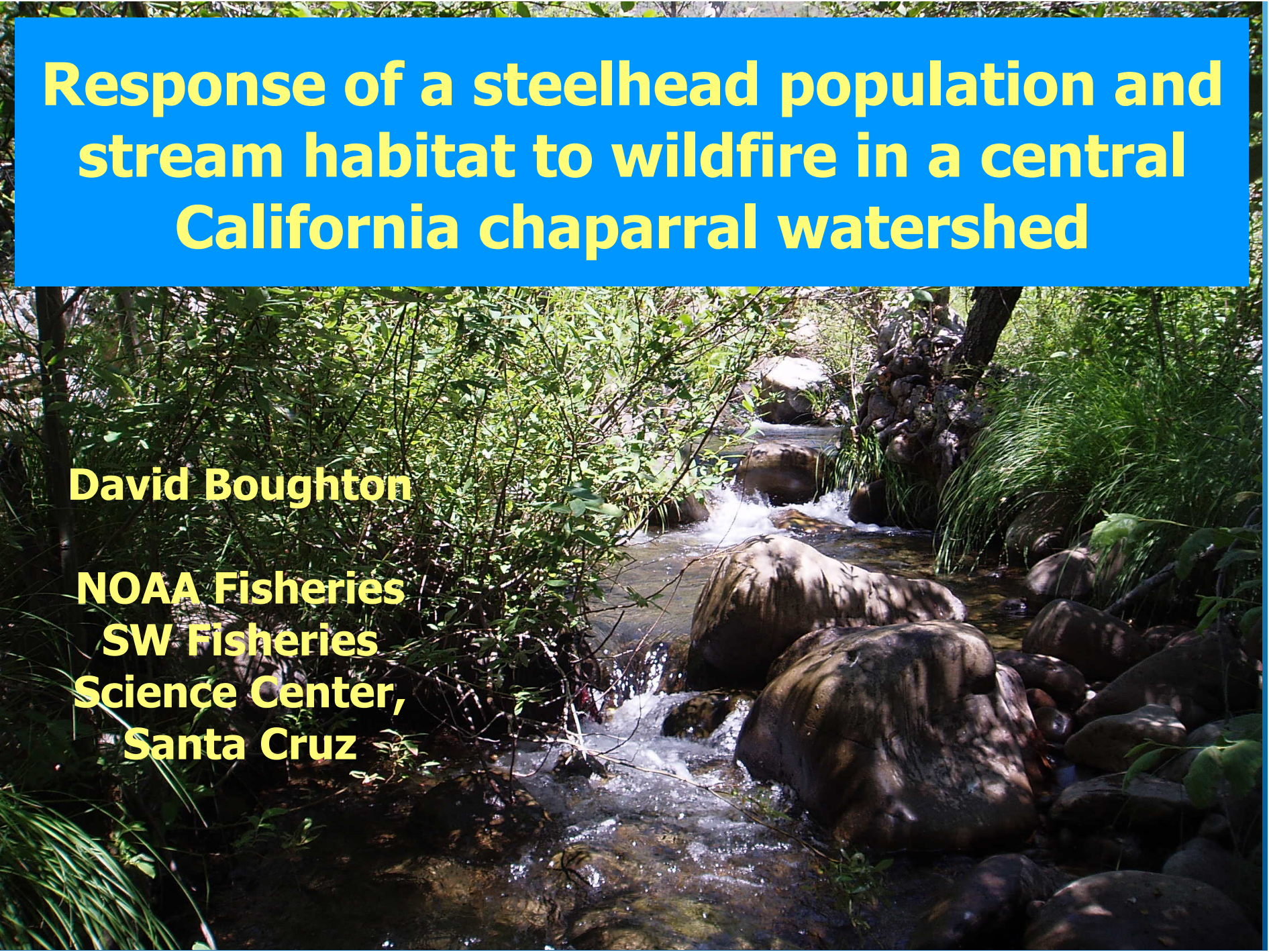


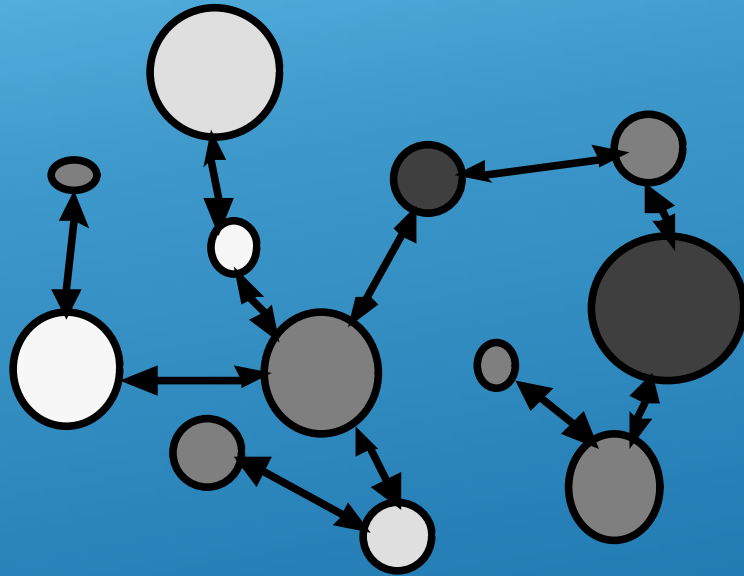
Response of a steelhead population and stream habitat to wildfire in a central California chaparral watershed

David Boughton

**NOAA Fisheries
SW Fisheries
Science Center,
Santa Cruz**



Spatial Structure

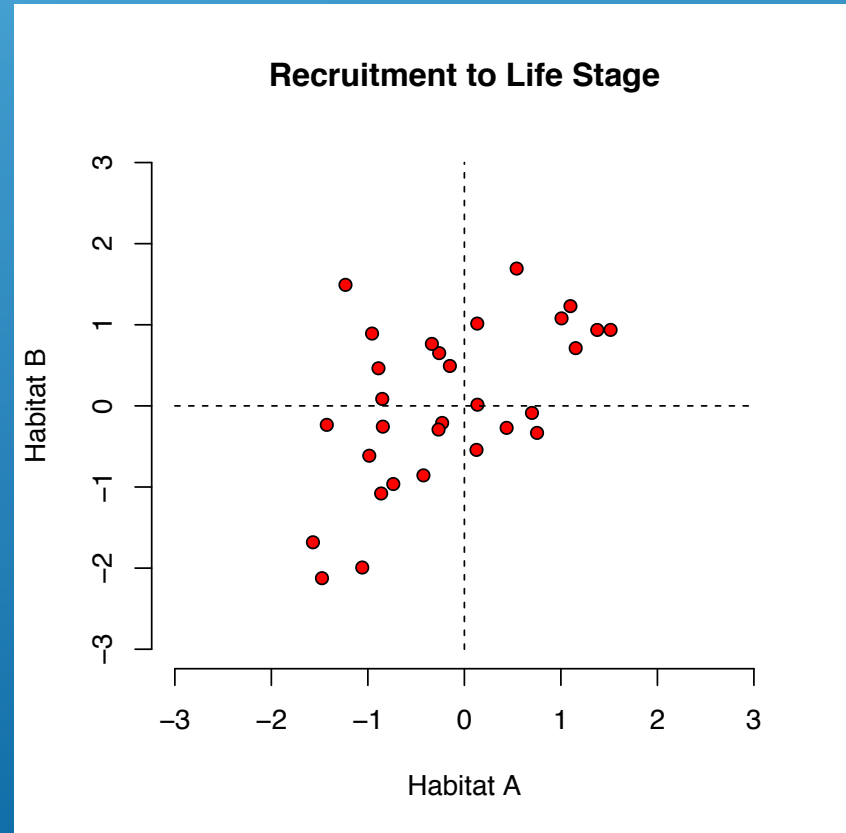
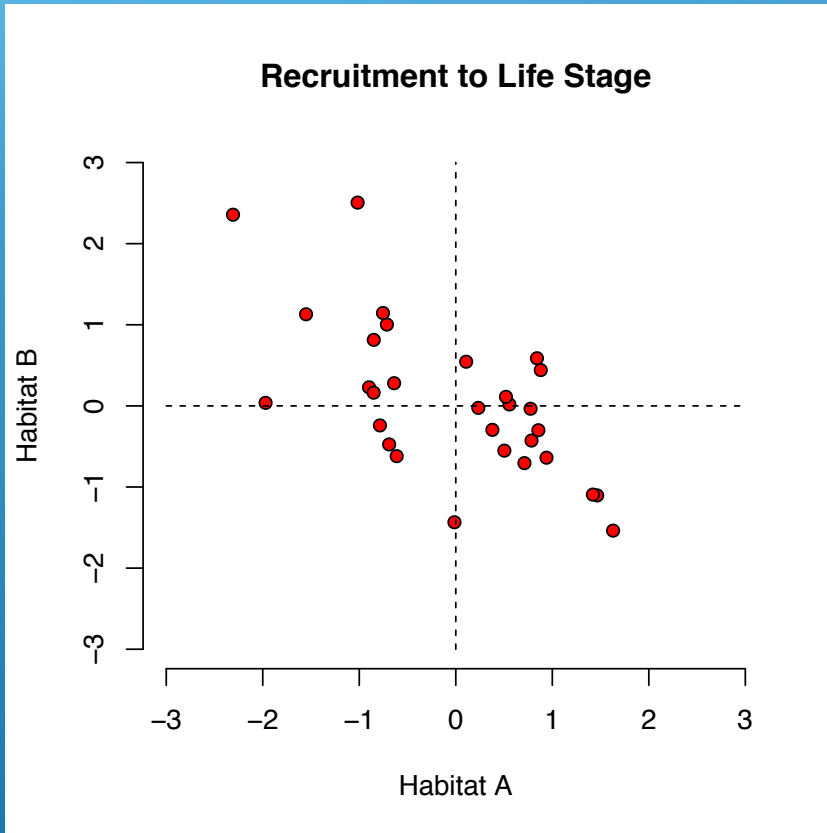


**Structured Population
with no extinctions**

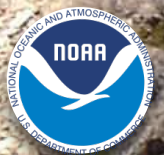
From McElhaney et al. 2000, p. 92

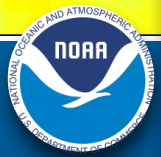
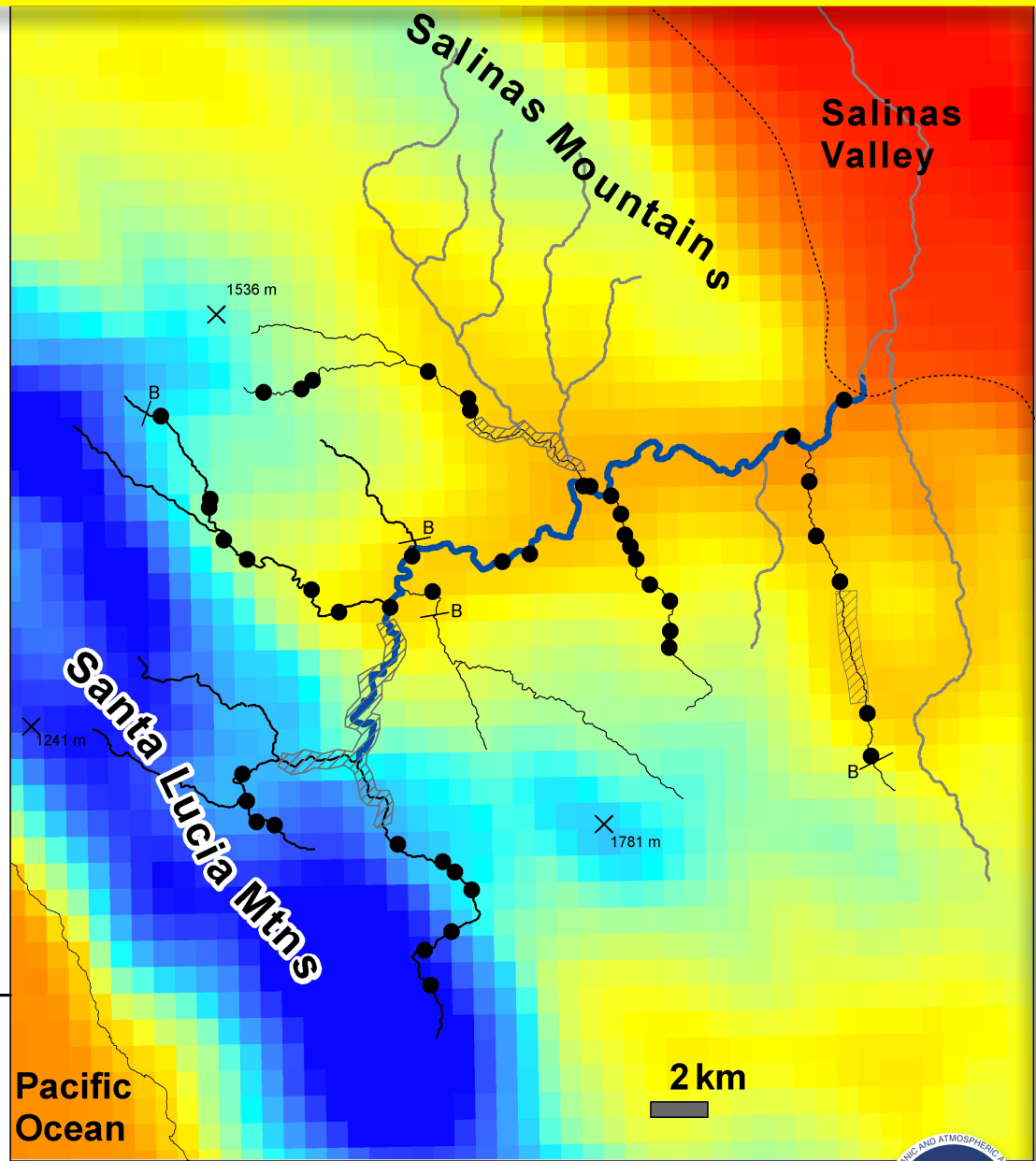
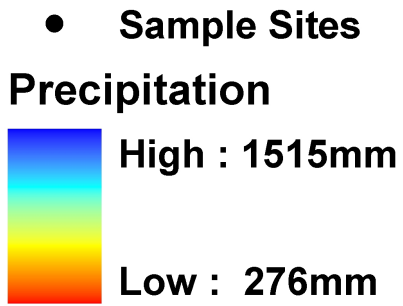
To increase viability,
You want this:

More than this:

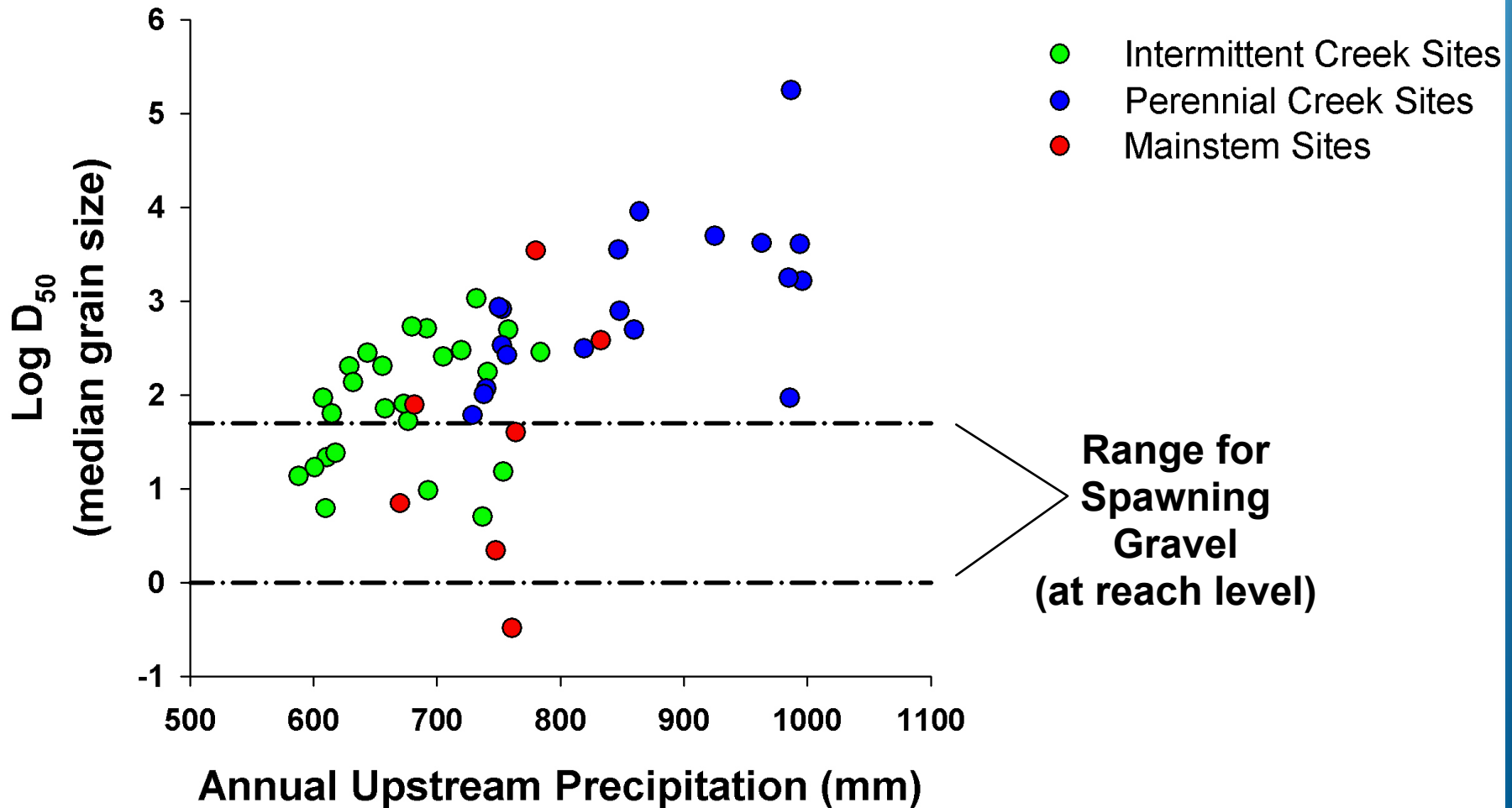


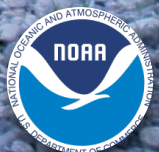
Arroyo Seco River, Central California Coast





Precipitation and Median Grain Sizes





Perennial Intermittent Mainstem

Distribution
Distribution
Distribution

**Spawning
Habitat
Distribution**

**YOY
Distribution
(Early Summer)**

**1+
Distribution**

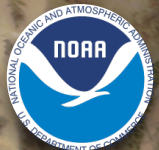
Perennial Intermittent Mainstem
Stream Type

Bars = 50% credible intervals

O. mykiss distribution Arroyo Seco, 2006

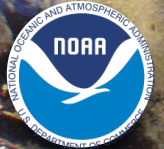


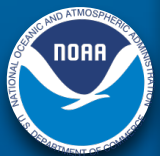
Indians Fire
11 June 2008

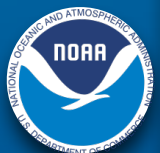


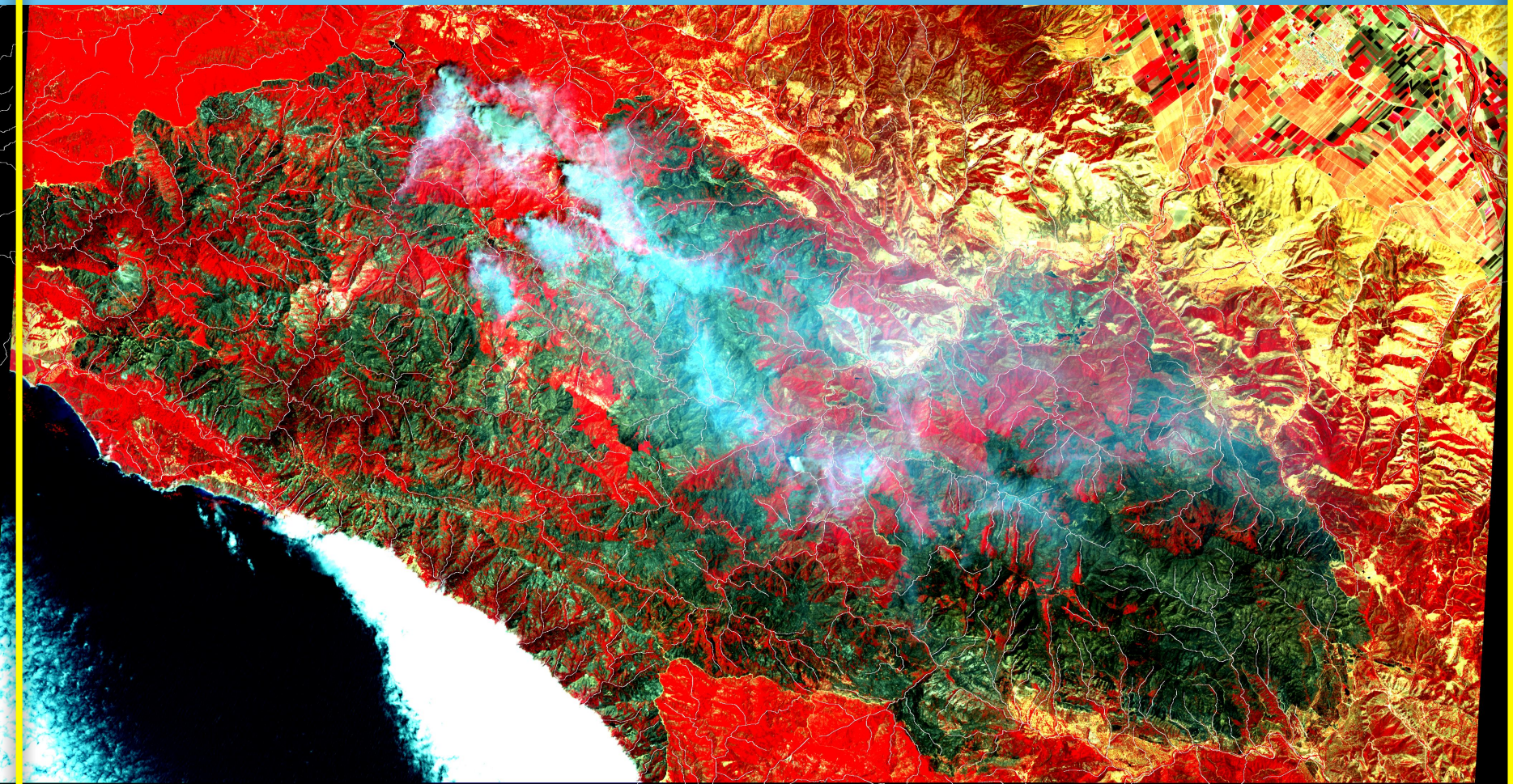






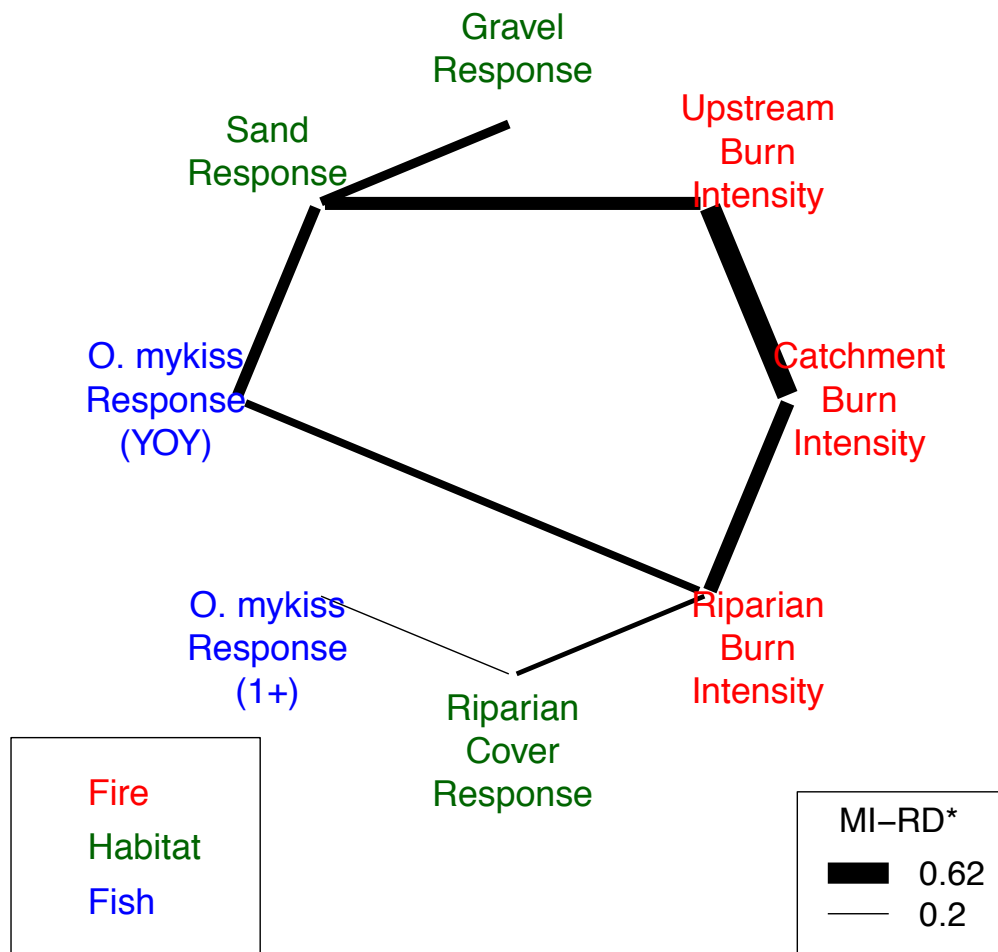




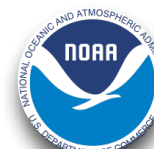


Max-Relevance/Min-Redundancy Influence Diagram

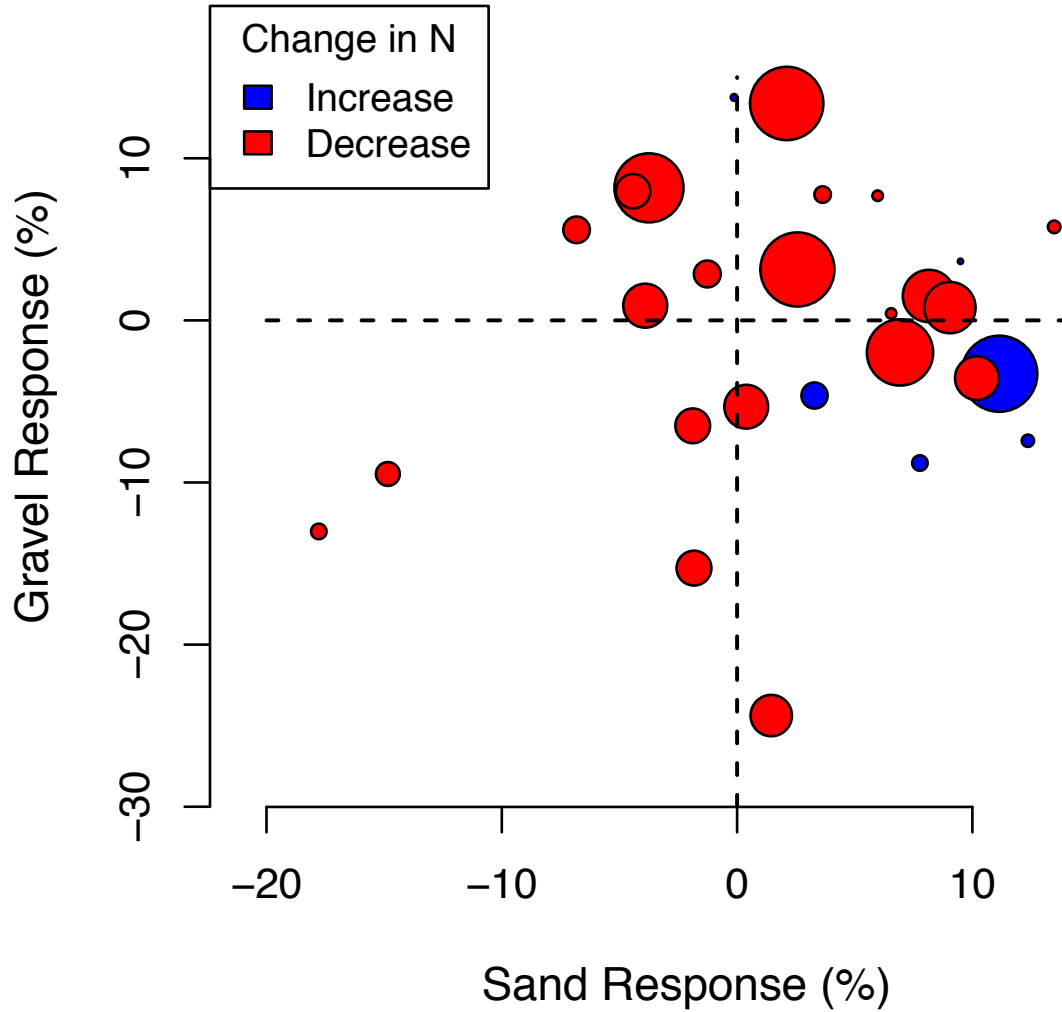
(Peng et al. 2005)

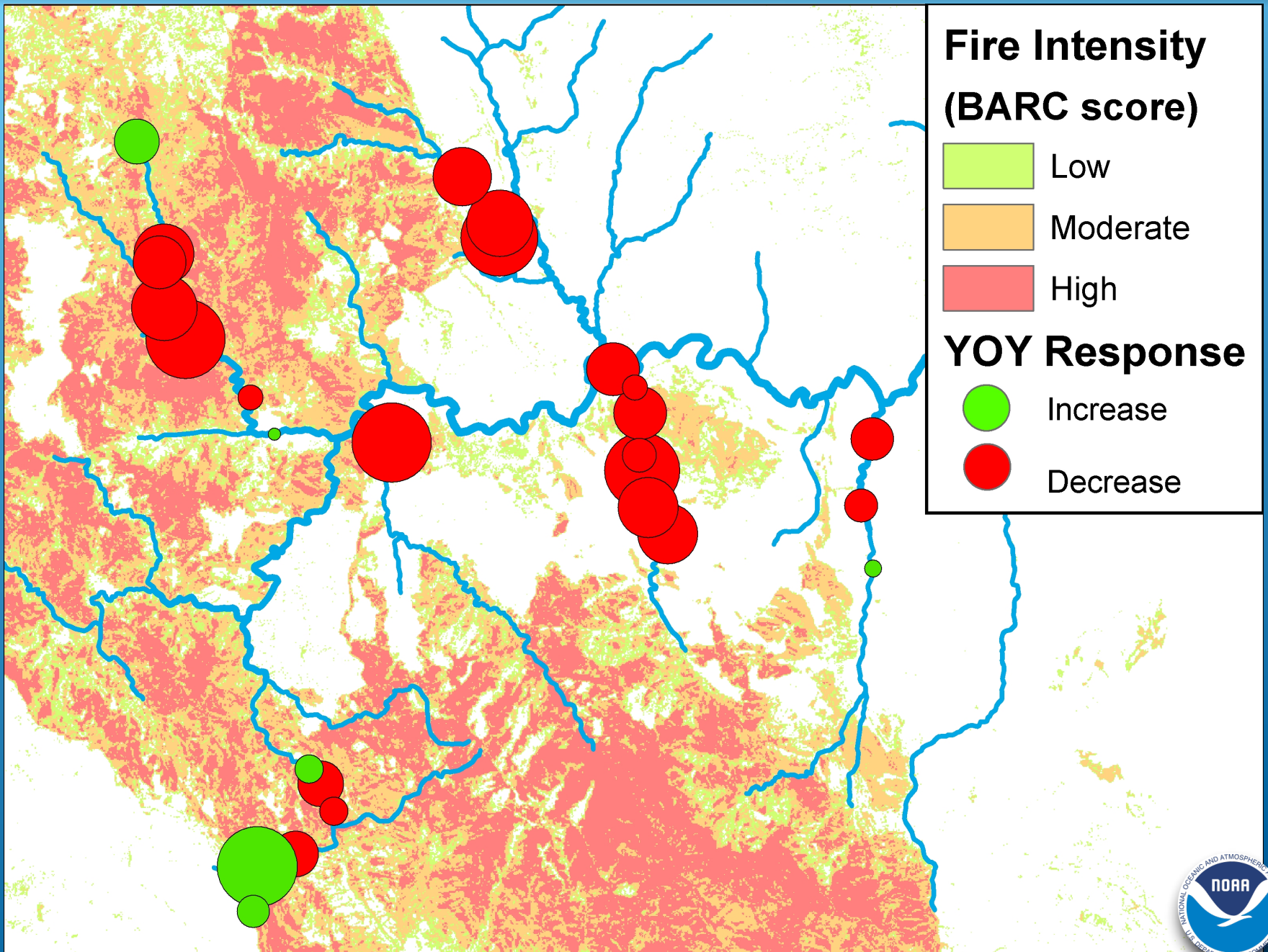


* Mutual Information minus Redundancy



A. O.mykiss Response (YOY)





Fire Intensity (BARC score)

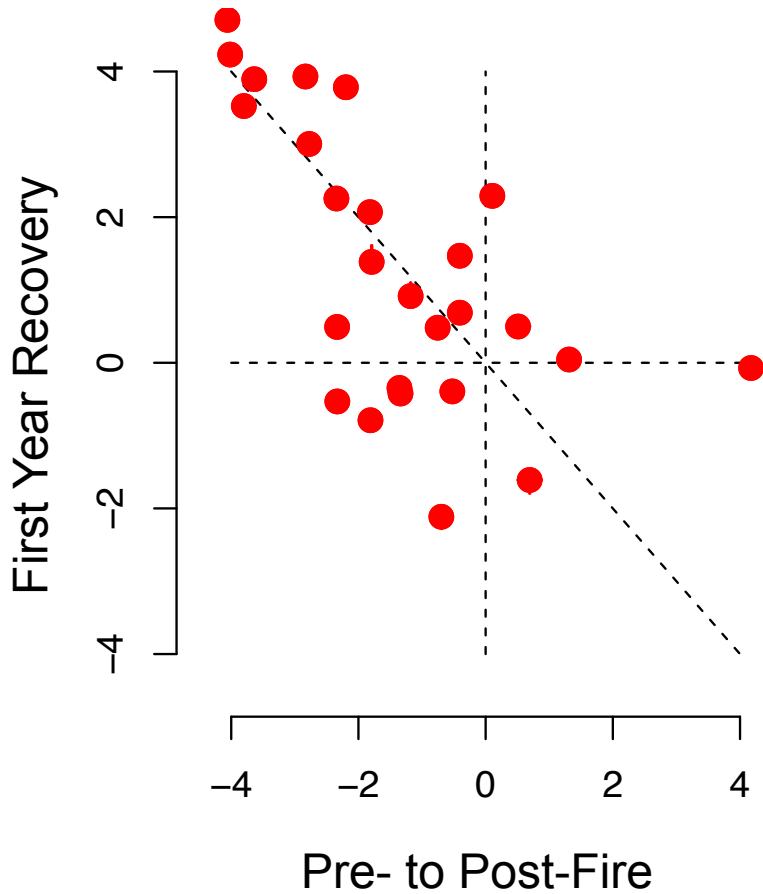
- Low
- Moderate
- High

YOY Response

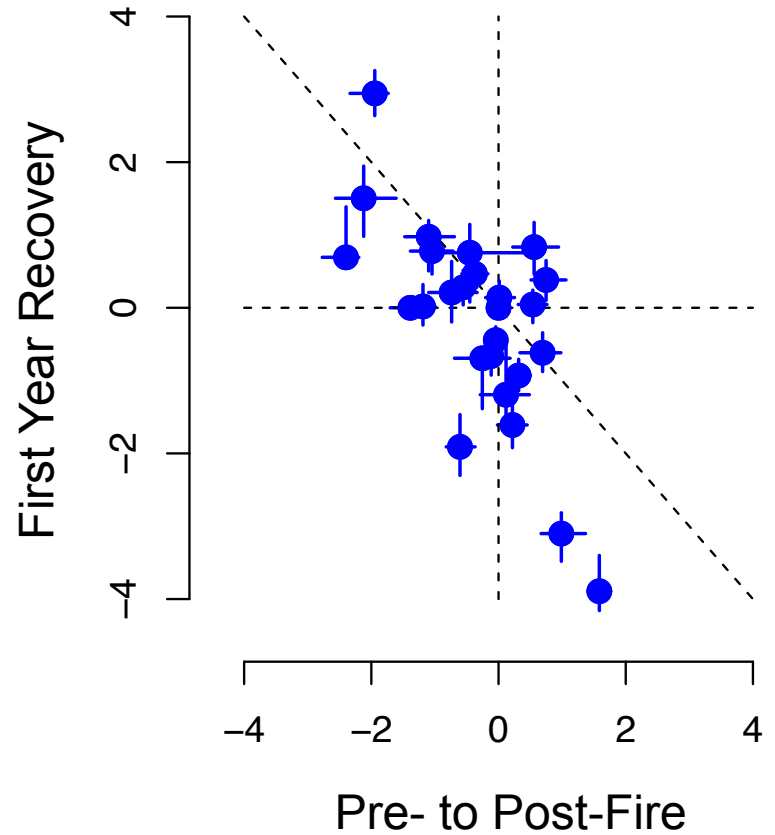
- Increase
- Decrease



YOY Density Changes (log-ratio)

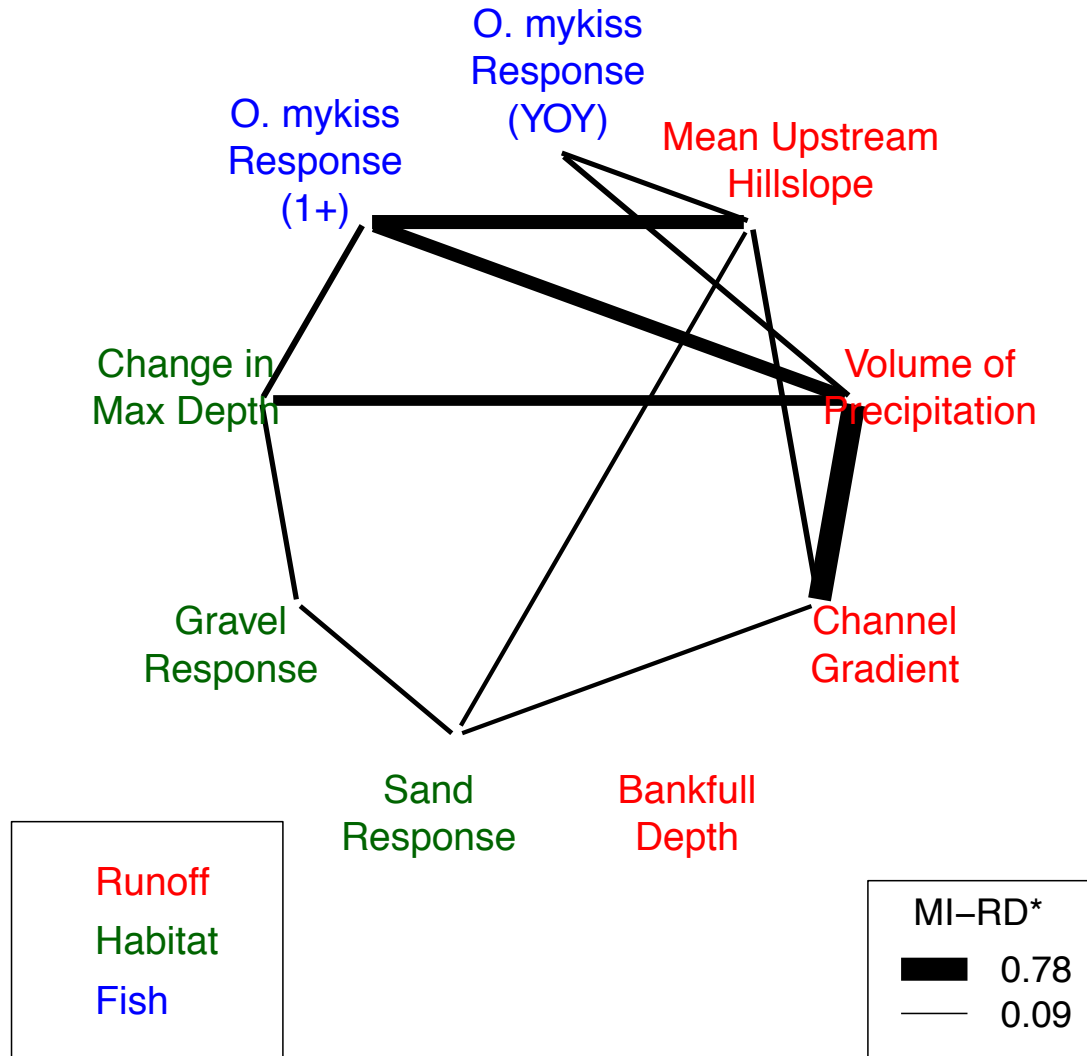


1+ Density Changes (log-ratio)

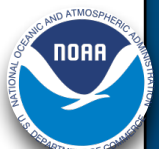


Max-Relevance/Min-Redundancy Influence Diagram

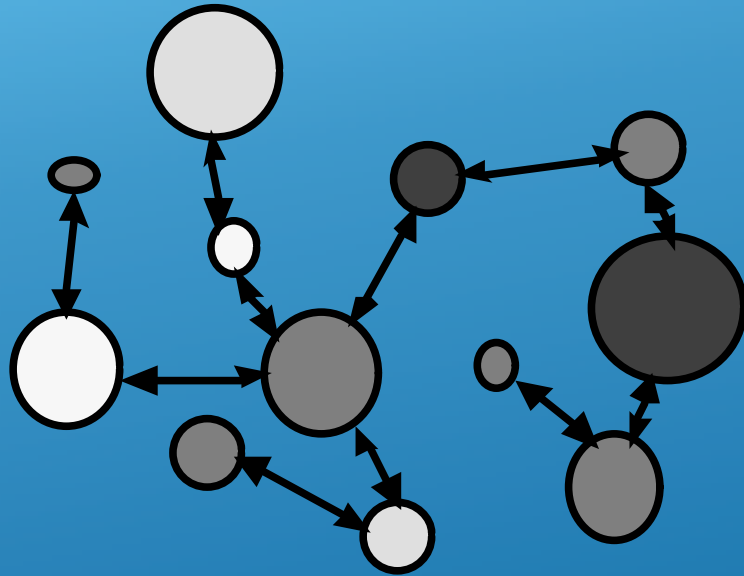
(Peng et al. 2005)



* Mutual Information minus Redundancy



Spatial Structure



**Structured Population
with no extinctions**

From McElhaney et al. 2000, p. 92

Thanks to:

Heidi Fish

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