Connections Between

Grazing

Riparian Proper Functioning Condition

Management Objectives

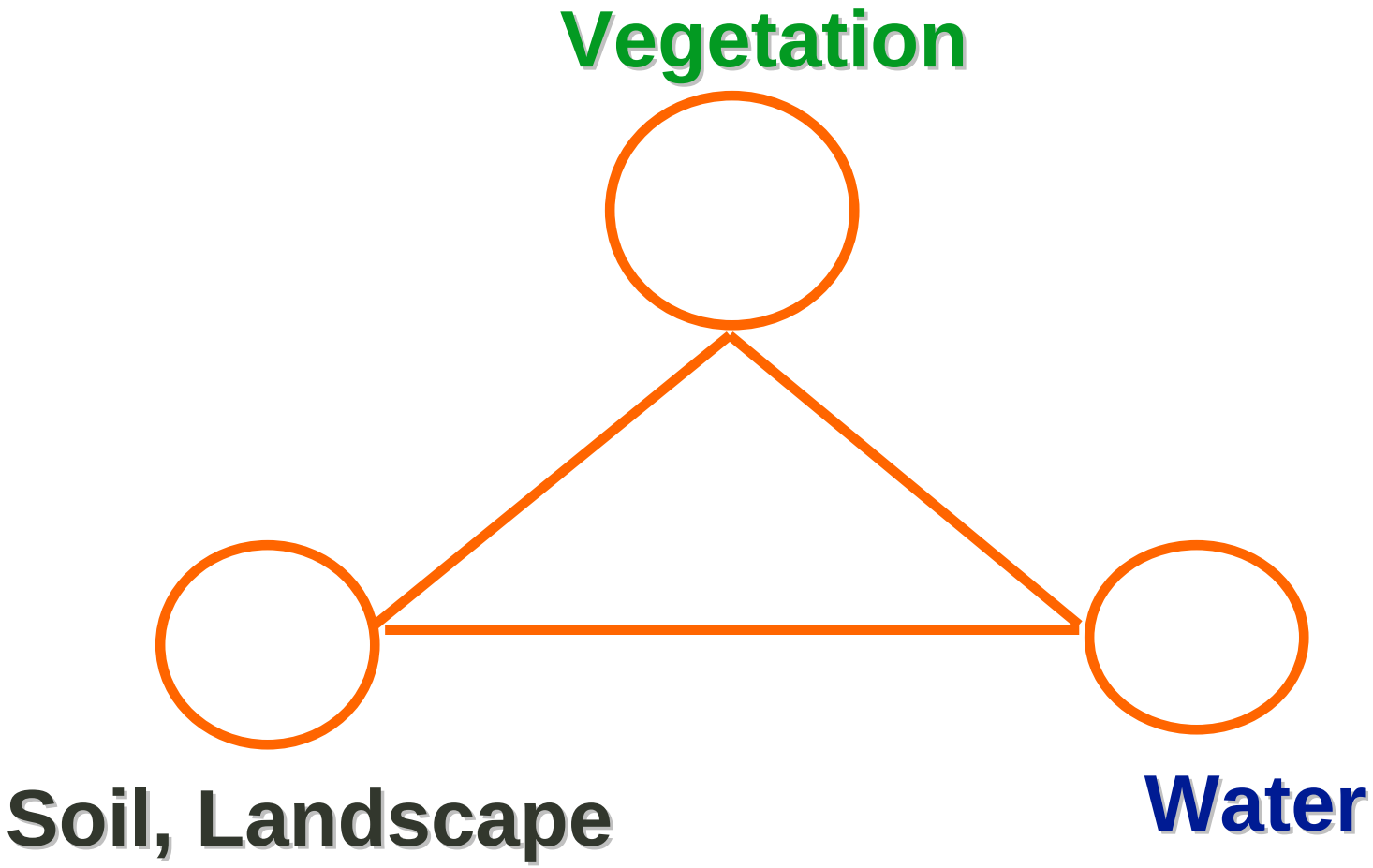
Monitoring

Use of PFC

- Helps identify some objectives
- May help focus/reduce monitoring

PFC is the minimum condition required for sustaining resource production.

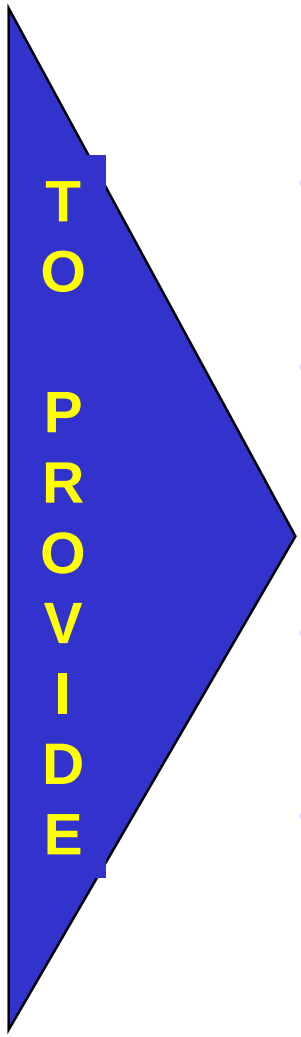
Natural Riparian Resources



Proper Functioning Condition

Adequate vegetation, landform or large woody debris present to:

- Dissipate stream energy
- Reduce Erosion
- Filter sediment
- Capture bedload
- Aid floodplain development
- Improve floodwater retention and groundwater recharge
- Develop root masses that stabilize streambanks



- Improved water quality
- Diverse ponding and channel characteristics
- Habitat for fish & wildlife production
- Greater biodiversity

Functional - At Risk

Riparian-Wetland Areas in Functional Condition (partially)

However an existing attribute

- Soil
- Water
- Vegetation

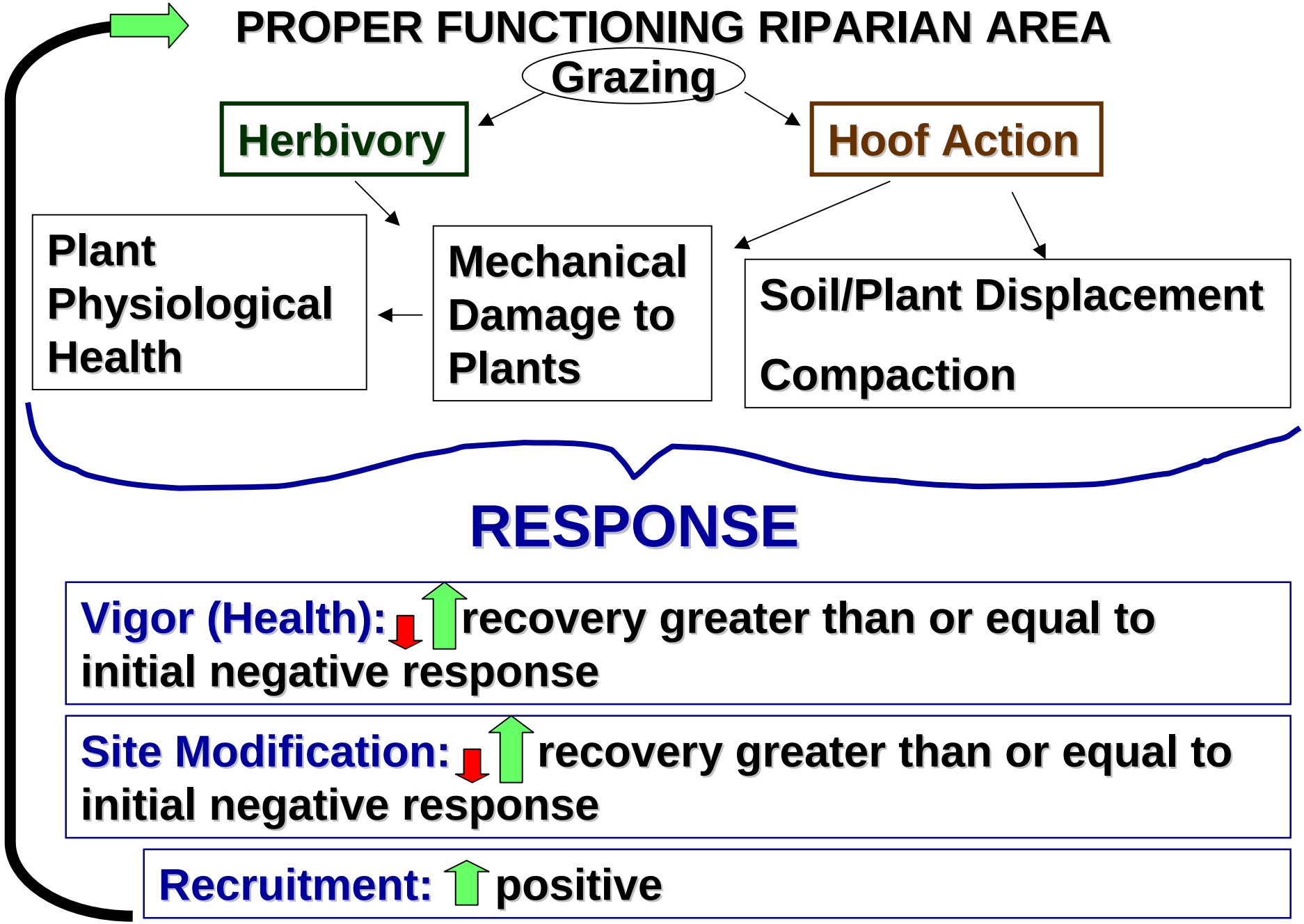
Makes them susceptible to degradation

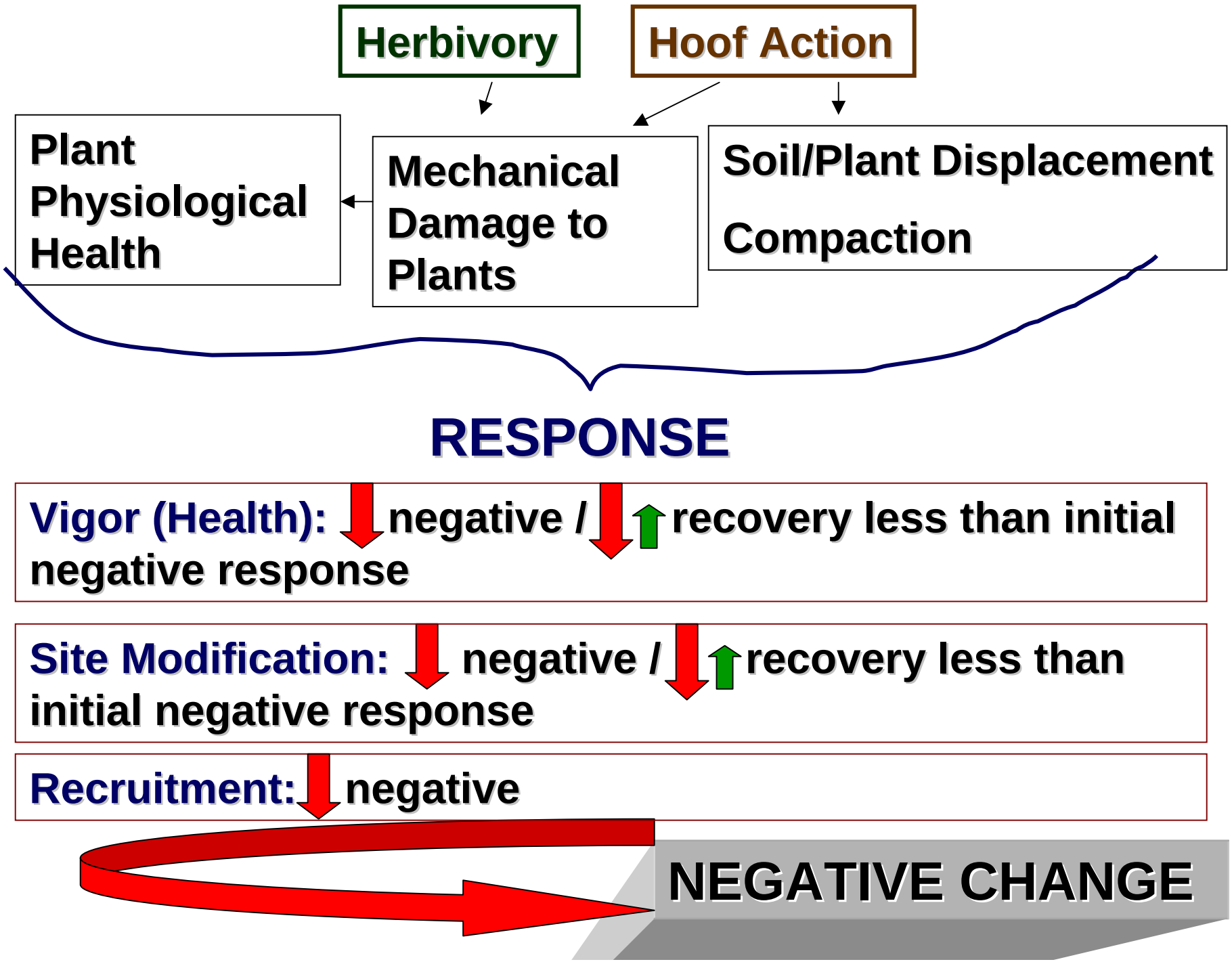
Nonfunctioning

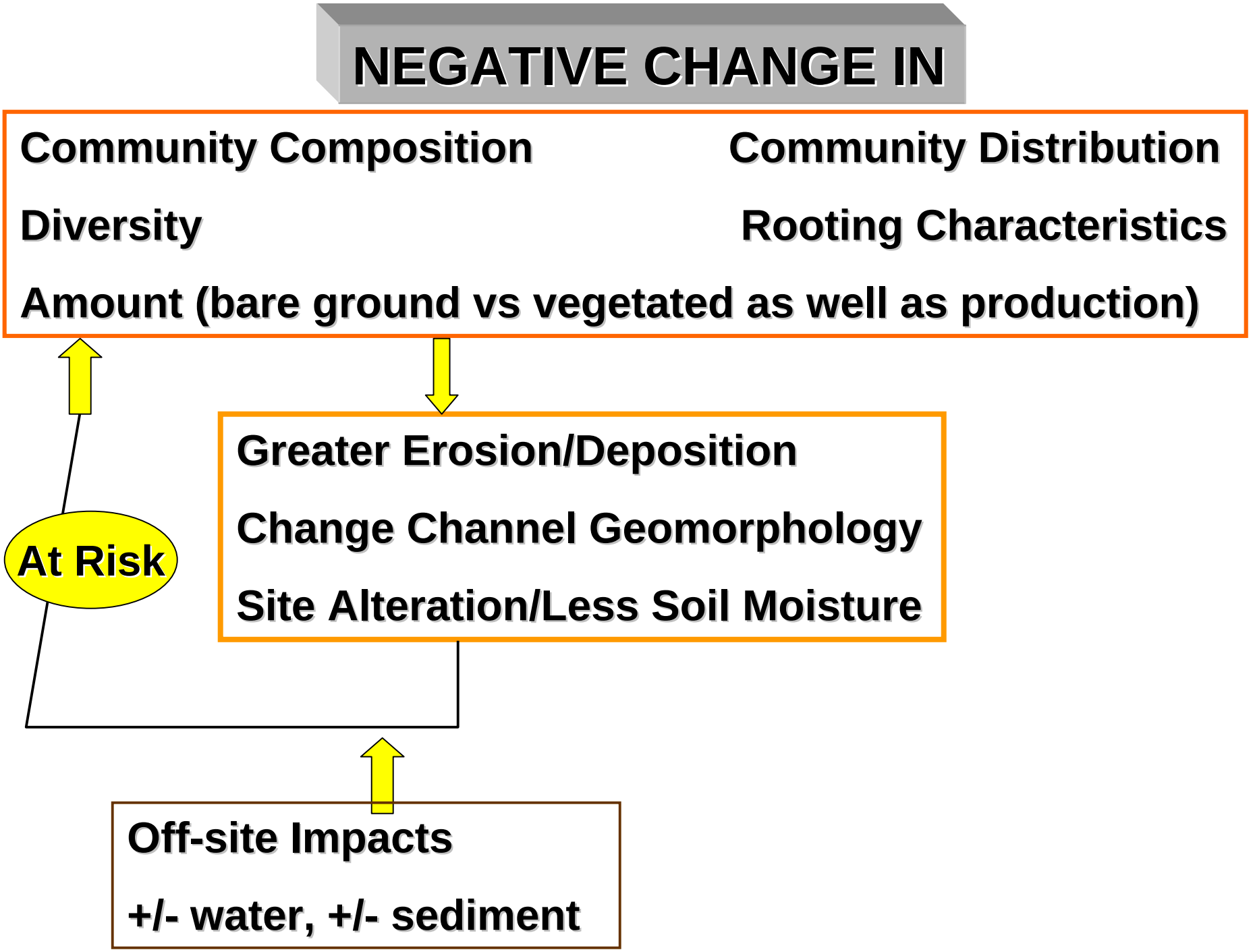
Areas that are clearly not providing adequate vegetation, landform, or large woody debris

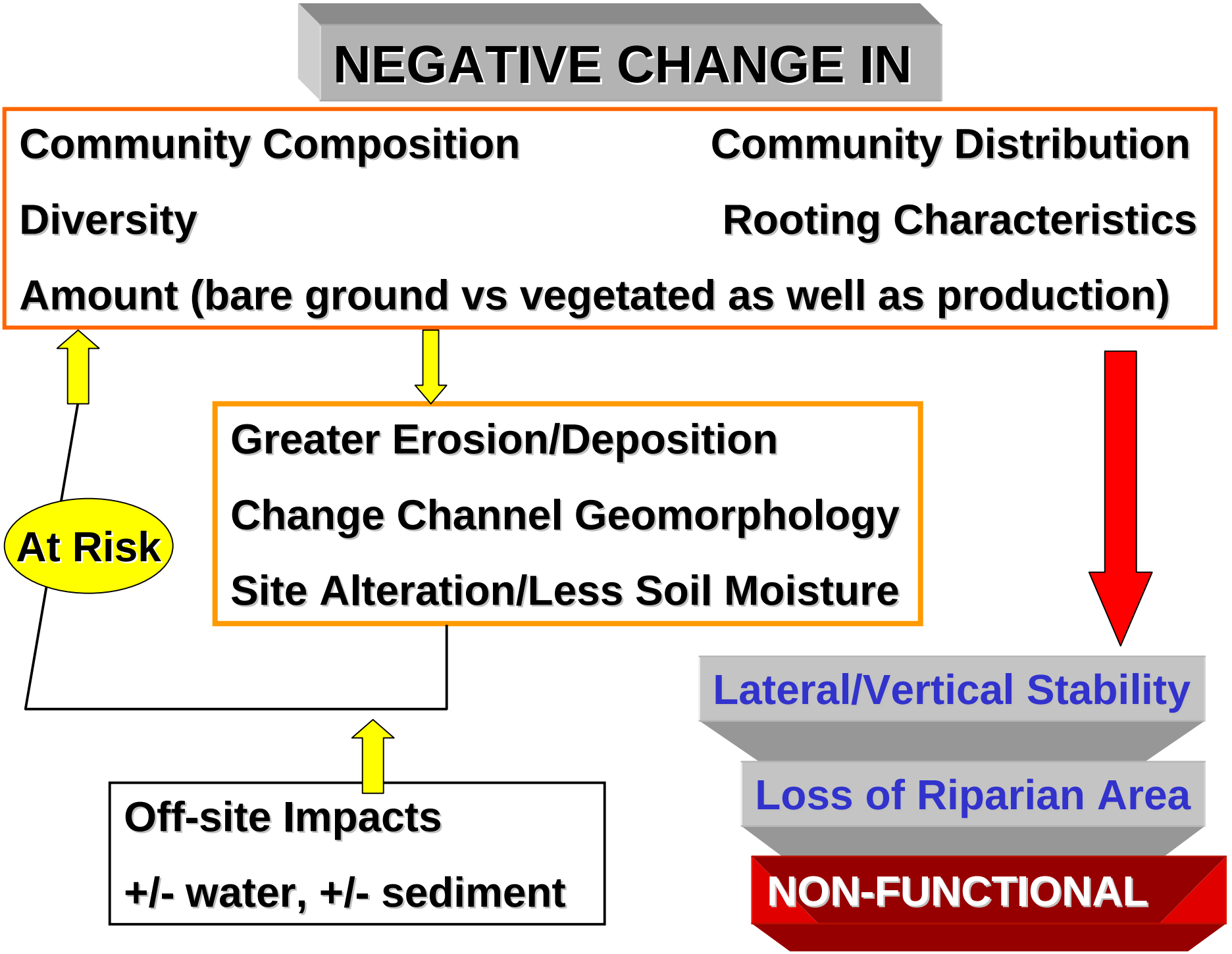
To:

- Dissipate stream energy
- Improve floodwater retention & groundwater recharge
- Stabilize streambanks
- *And other characteristics common to PFC*


PROPER FUNCTIONING RIPARIAN AREA
Grazing
Herbivory
Hoof Action
Plant Physiological Health
Mechanical Damage to Plants
Soil/Plant Displacement
Compaction
RESPONSE
Vigor (Health): recovery greater than or equal to initial negative response
Site Modification: recovery greater than or equal to initial negative response
Recruitment: positive


Herbivory
Hoof Action
Plant Physiological Health
Mechanical Damage to Plants
Soil/Plant Displacement
Compaction
RESPONSE
Vigor (Health): negative / recovery less than initial negative response
Site Modification: negative / recovery less than initial negative response
Recruitment: negative
NEGATIVE CHANGE


NEGATIVE CHANGE IN
Community Composition
Community Distribution
Diversity
Rooting Characteristics
Amount (bare ground vs vegetated as well as production)
Greater Erosion/Deposition
Change Channel Geomorphology
Site Alteration/Less Soil Moisture
At Risk
Off-site Impacts
+/- water, +/- sediment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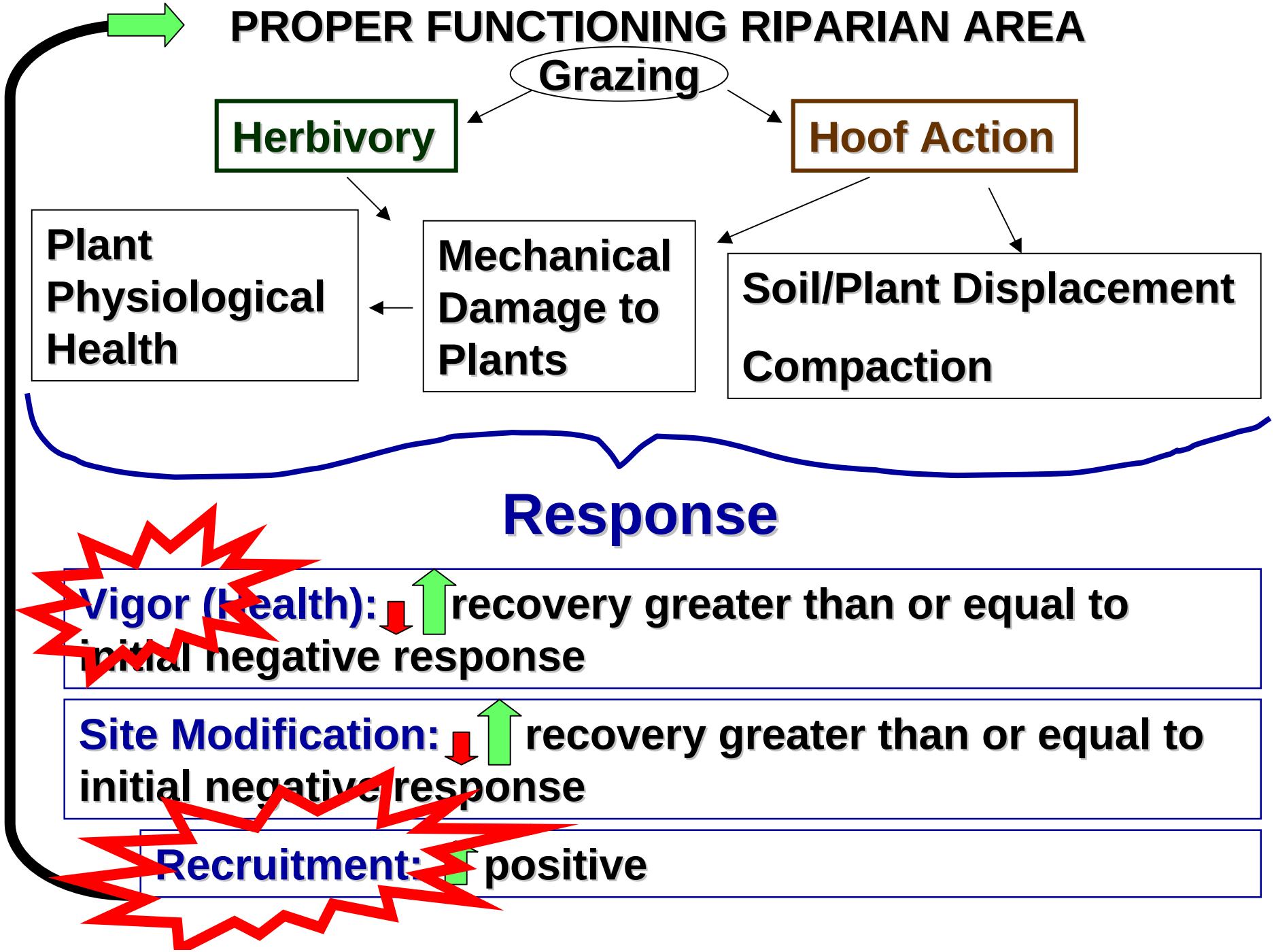
Site Alteration/Less Soil Moisture
At Risk
Off-site Impacts
+/- water, +/- sediment
Lateral/Vertical Stability
Loss of Riparian Area
NON-FUNCTIONAL


PROPER FUNCTIONING RIPARIAN AREA
Grazing
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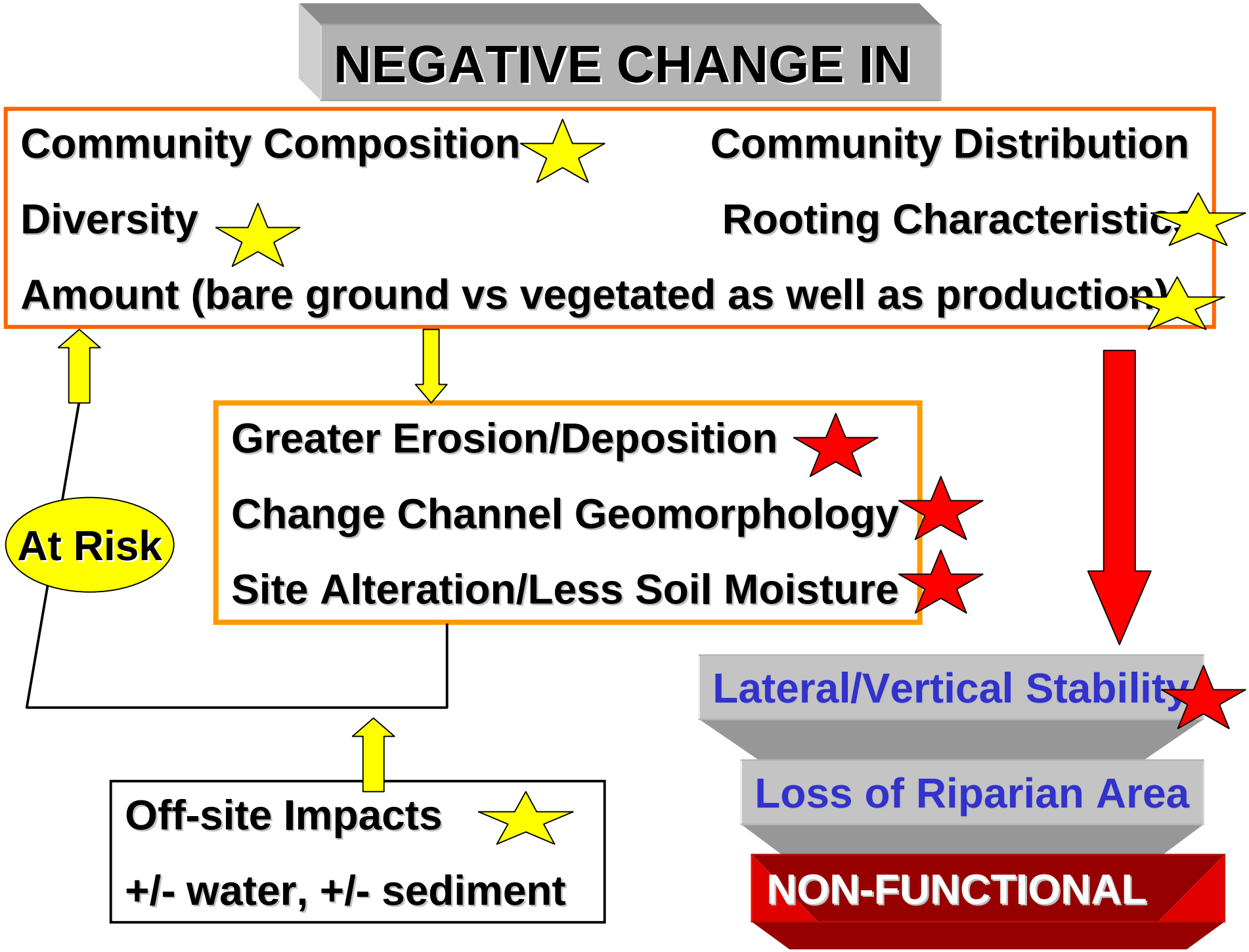
Mechanical Damage to Plants
Soil/Plant Displacement
Compaction
Response
Vigor (Health): recovery greater than or equal to initial negative response
Site Modification: recovery greater than or equal to initial negative response
Recruitment: positive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Loss of Riparian Area
NON-FUNCTIONAL
Off-site Impacts
+/- water, +/- sediment

PFC

- Identifies most of the responses that might be associated with grazing
- SHOULD BE AN OBJECTIVE
- Other assessment components may need to be measured (monitored) to see if progressing toward or maintaining PFC

Responses of Hydrology and Soil Erosion/Deposition Components Often Predicated by Changes in Vegetation

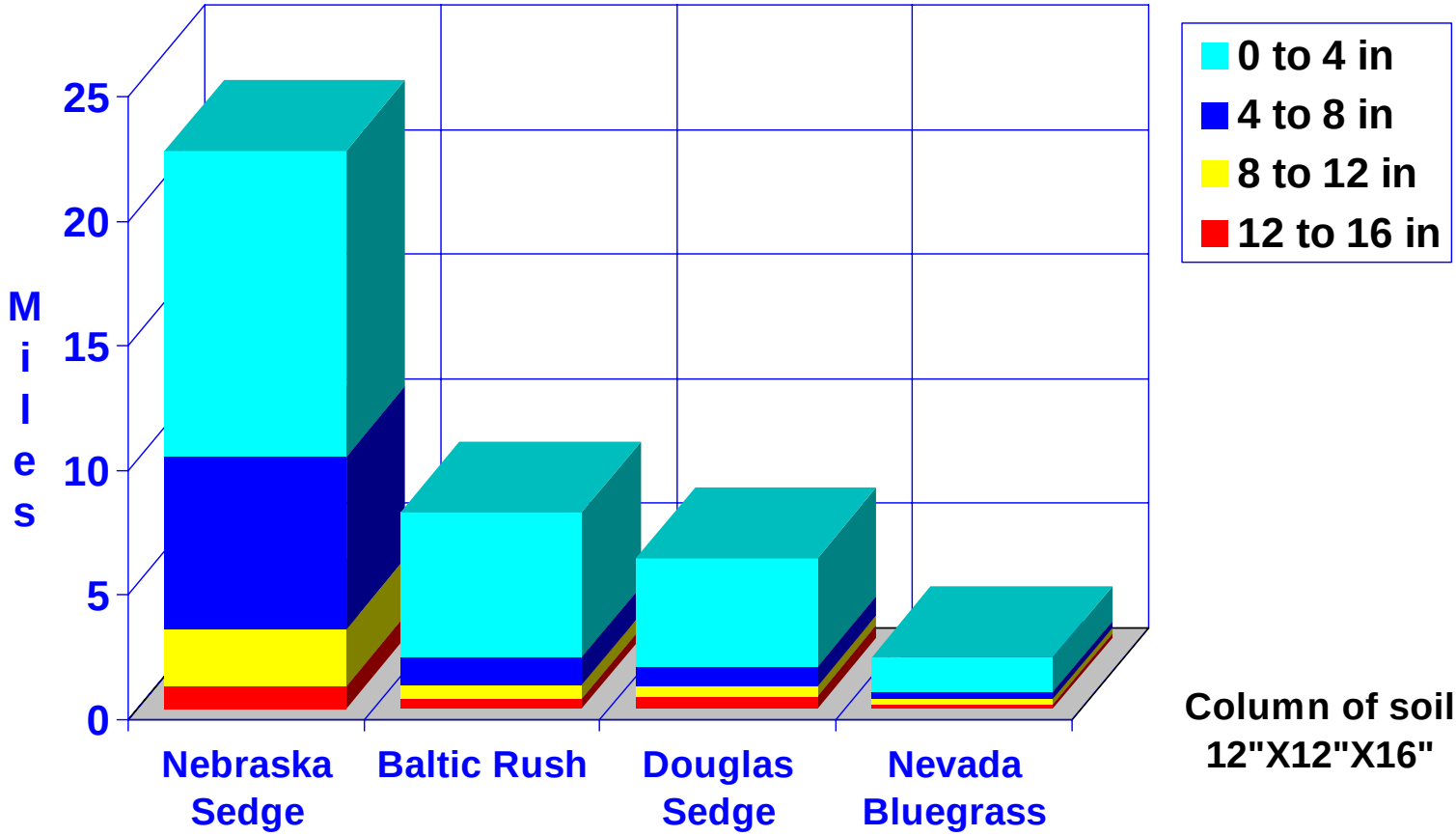
- Kind of plants
- Proportion of plants
- Amount of plants

Sufficient to provide lateral/vertical stability in a relatively high hydrologic event.

Kind of Plants

- Most broad leaf sedges, especially with
- Most willows and other woody vegetation
- Many rushes
- A few grasses & forbs

Root Length



Manning, M.E., et al, 1989

Proportion of Plants

Generally greater than 25% composition of right kinds should be dominant/co-dominant in community types

(refer to local classifications)

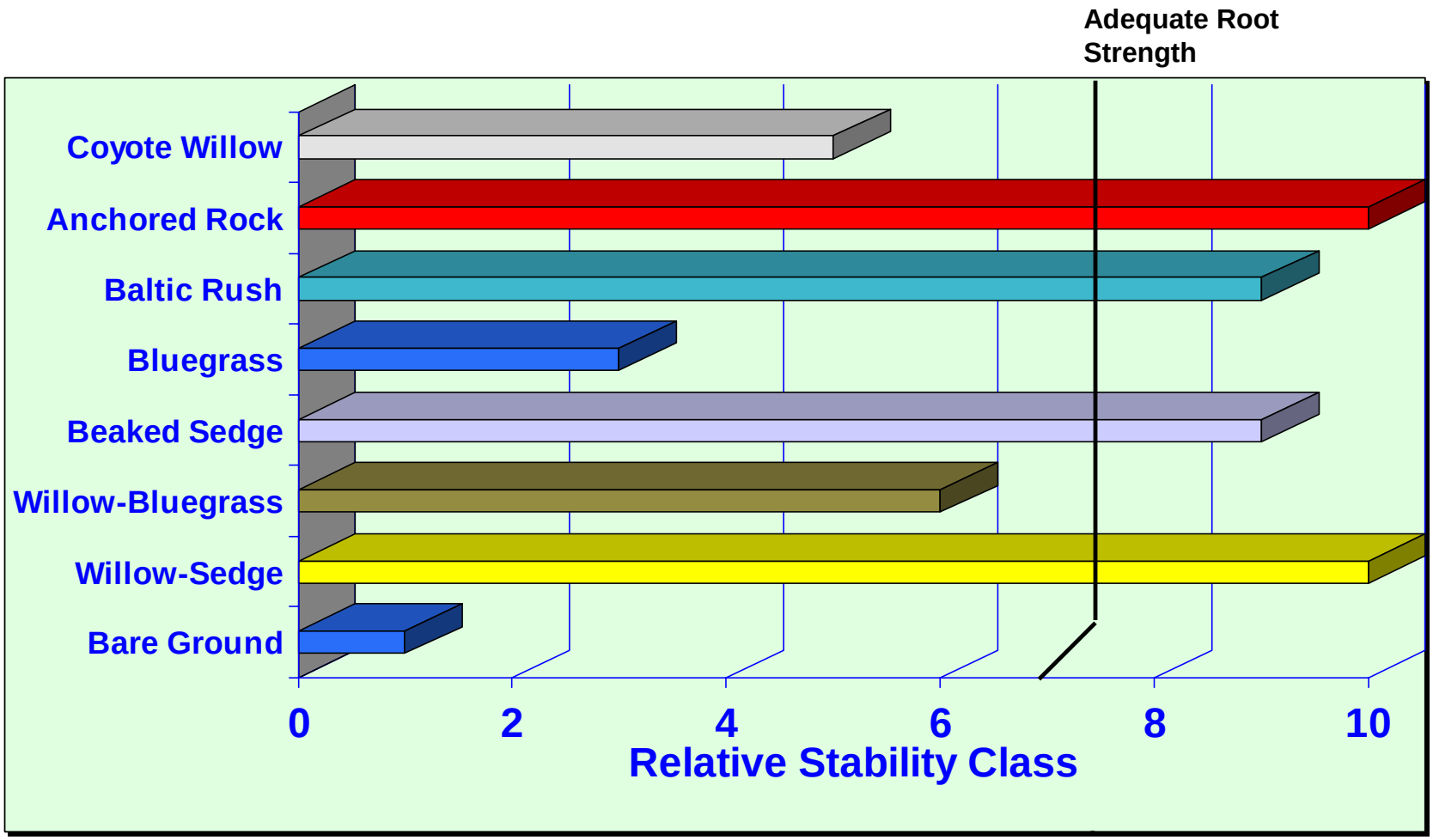
Amount of Plants or Plant Communities (Generally)

Stable communities + anchored rocks/logs

=

80 - 95 % channel/shoreline length

Channel Stability Rating (Vegetation)



Winward 1999
Appendix B

Monitoring the Vegetation Resources in Riparian Areas by Winward 1999

- Will provide one set of recommended protocols to address all these components
- Others can be used