


California Rapid Assessment Method
for Wetlands
(CRAM)
Stressor Checklist



Stressor Checklist

- *Anthropogenic perturbations within the wetland or in the surrounding landscape with negative impact on condition and function*

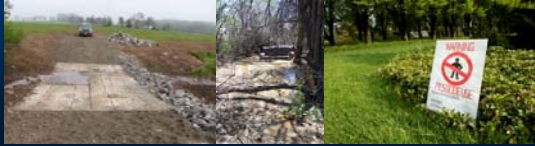


Pressure-State-Response Model
(PSR)

- Natural processes (disturbance) and human operations (stressors) put *pressure* on wetlands
- Pressure affects wetland *state* (condition)
- Degraded states trigger management *responses* to reduce pressure by adjusting stressors

Background

- Physical and biological processes connect wetlands to their environmental settings, thus help shape wetland conditions
- Land use practices influence these processes (Frisell et al. 1986, Roth et al. 1996, Scott et al. 2002)
- Wetland conditions can be affected by internal stressors as well, but are less abundant than landscape stressors



Stressor Checklist

- Four assumptions:
 - Stressor(s) can lead to deviation from best attainable condition
 - More stressors can cause a decline in condition
 - Linear, multiplicative, other non-linear model
 - Increase in intensity/proximity increases decline in condition
 - Continuous/chronic stress increases decline in condition



Stressor Checklist

- Identify stressors within an AA or immediate vicinity that might account or low condition scores
- A single stressor might be the primary cause, but it is usually due to interactions among multiple stressors (USEPA 2002)
- Can be "present" or "significant negative effect"



Stressor Checklist

HYDROLOGY ATTRIBUTE (WITHIN M M OF AA)	Present	Significant negative effect on AA
Point Source (PS) discharges (POP's, other non-stormwater discharges)		
Non-point Source (NPS) discharges (urban runoff, farm discharges)		
Flow alterations to natural channels		
Dams (overstream, detritus basin, exchange basins)		
Flow alterations (obstruct, percolation cessant)		
Wet/dry structures, tide gates		
Channel bank channel		
Eroded channel (scarp, exposed channel bank, bad)		
Dike/Levee		
Groundwater extraction		
Ditches (barrage, agricultural drainage, mosquito control, etc.)		
Artificially managed hydrology		
Comments		

Important to record nature and degree of stressors for future module evaluation and development

Stressor Checklist - Next Steps

- Overall stress on a wetland can be assessed as the number of evident stressors and their extent
- A stressor index, along side the condition index will give better context to CRAM scores, and assist in determining what remediation/rehabilitation measures are warranted
- USA-RAM developed a version for EPA's National Wetland Condition Assessment