
Toward a Mid-Atlantic Regional Wetlands Condition Assessment

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Mid-Atlantic Regional Wetlands Condition Assessment - Project Objectives

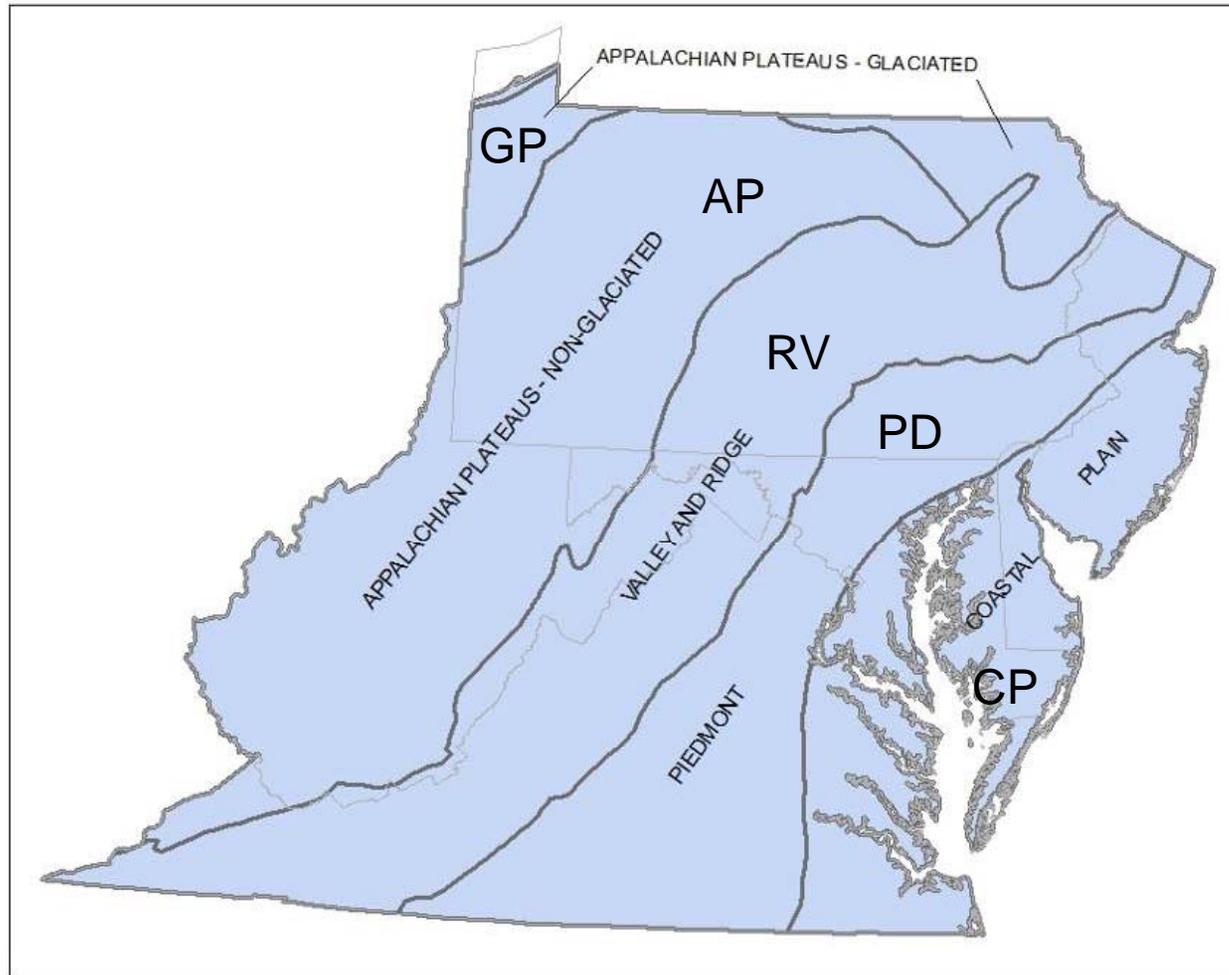
- Provide a periodic characterization of regional wetland conditions
 - based on probabilistic sampling
 - suitable at a number of spatial scales
 - Diagnose the dominant stressors that are affecting wetland condition
 - Generate a comprehensive landscape assessment of wetland conditions
 - Inform the setting of restoration and creation goals
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2008-2012

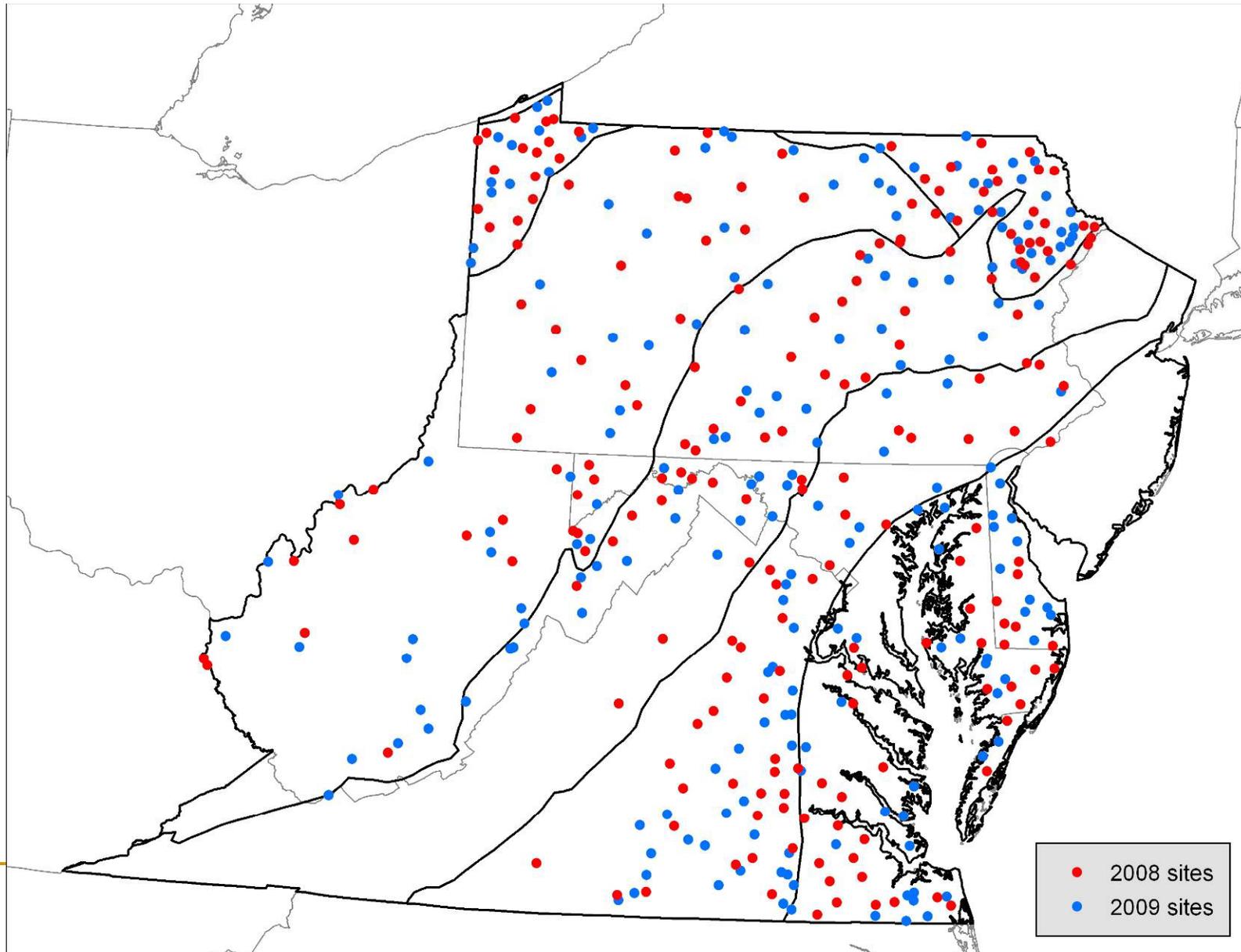
- Design, test, and apply a landscape assessment of all mapped wetlands in the region
 - extant remotely sensed data including ecosystem services - habitat and water quality
 - Design and test a rapid assessment approach
 - synthesis of existing methods in the region
 - Apply the rapid assessment method in a probabilistic survey design
 - (EPA's GRTS - Generalized Random Tessellation Stratified survey design)
 - characterize wetland condition at several scales in the Mid-Atlantic region
 - Initiate a strategy for continuing monitoring of wetlands in the region - 5 year iteration
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Stratification by Physiographic Province

- 5 physiographic units, 400 points sampled, min. 80 assessed points/ecoregion



Regional Wetland Assessment Sampling Locations



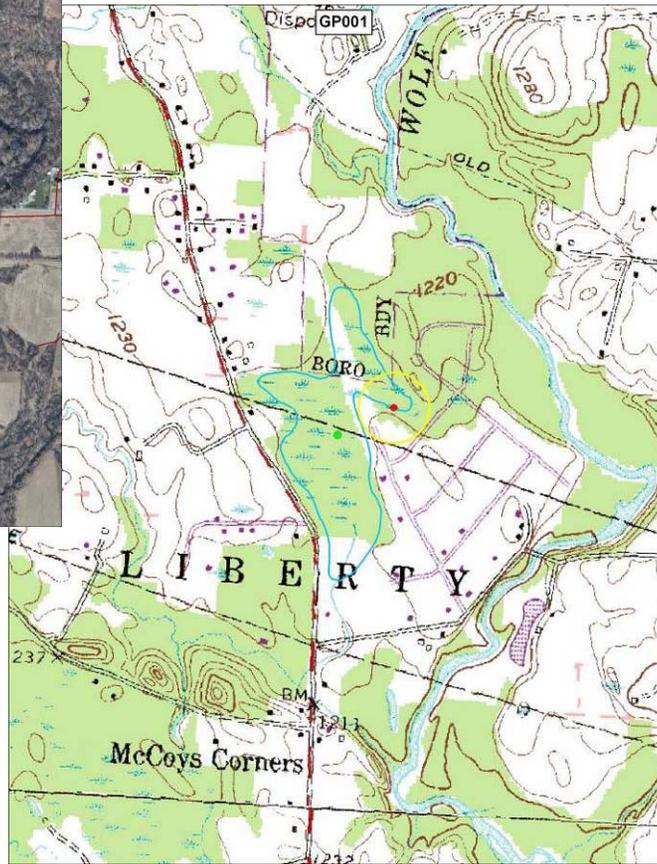
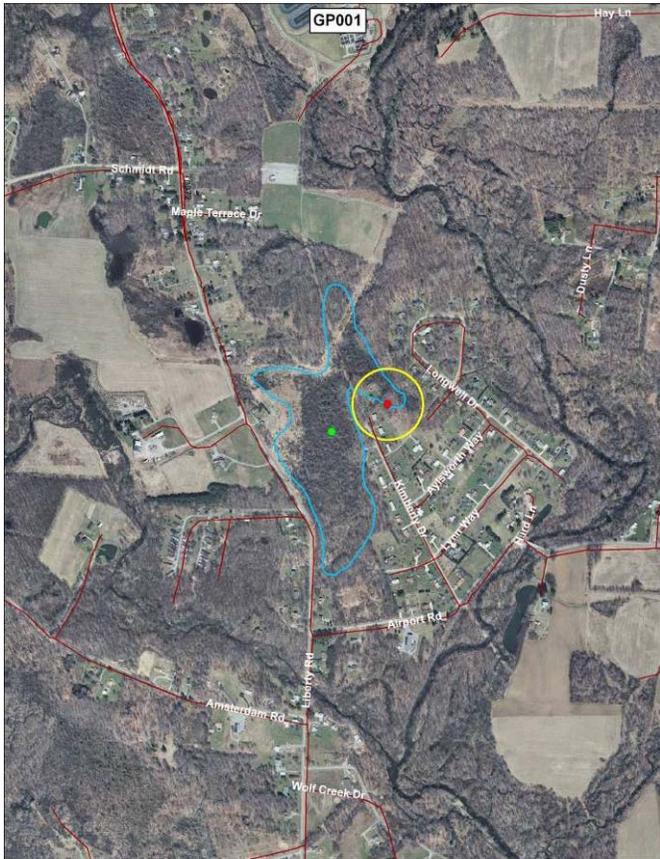


2008

Field teams
THANKS !!

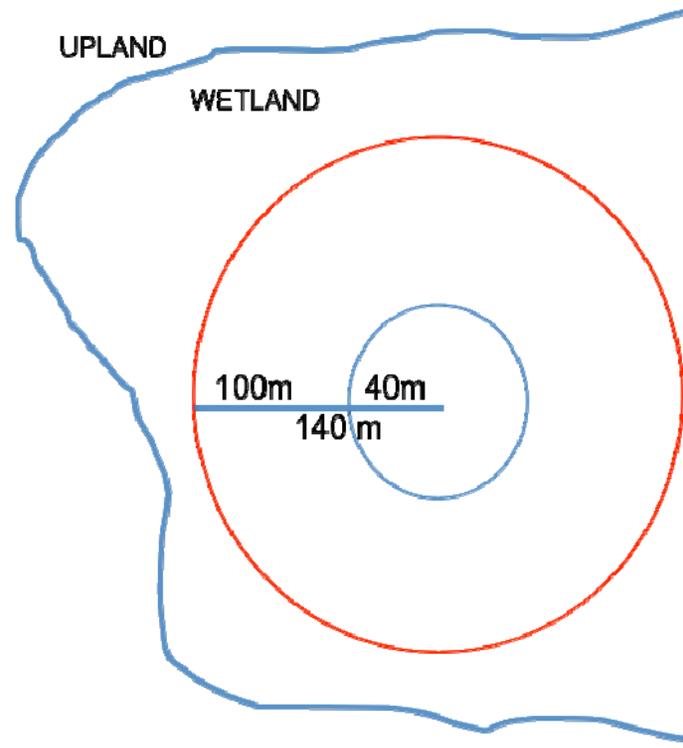


2009





Mid-Atlantic RAP Sampling Design



- Assessment Area (AA): 0.5 ha (40m-radius circle)
can be altered in shape to fit site)
 - Buffer – 100m concentric “ring” around AA
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Example point - C & O Canal along the Potomac River in Maryland



Progress: Level 2 - Rapid Assessment

2008

- Adapted DE-, PA- & VA- RAPs to Palm Pilots
- Conducted training and QA audit w/ USEPA
- Sampled 200 sites in 5 ecoregions (2 teams)
- Updated MAWWG members at Spring & Fall mtgs.

2009

- Developed (Unified) Mid-Atlantic RAP
 - Sampled 200 sites in 5 ecoregions (2 teams) in 2009 with Unified Mid-Atlantic RAP
 - Conducting landscape analysis on “all” NWI polygons
 - Developing Mid-Atlantic RAP Index scores
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(Unified) Mid-Atlantic RAP - Variables

■ Non-scoring factors

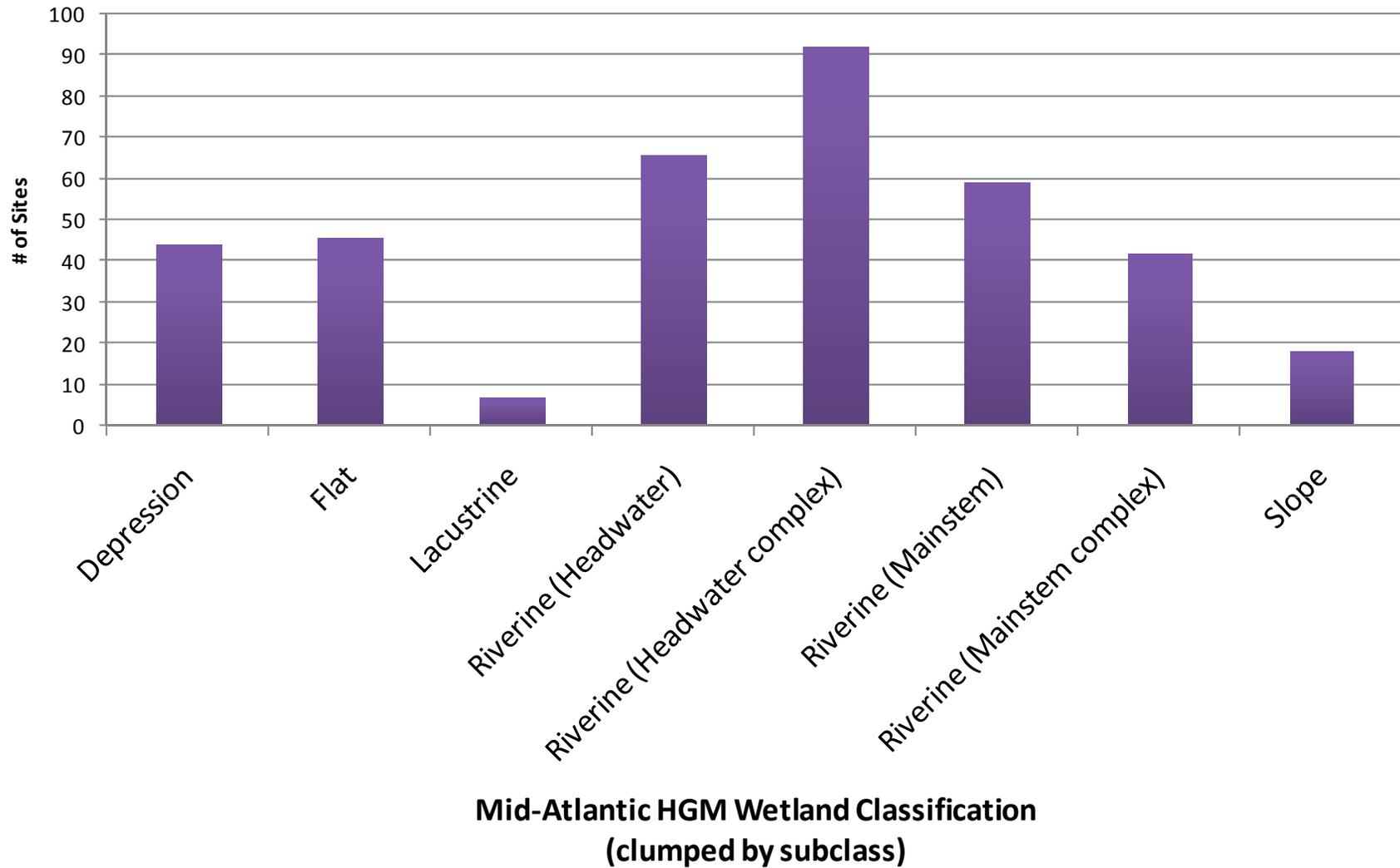
- ❑ HGM Class, according to Mid-Atlantic Classification by Brooks et al.
 - ❑ Wetland Successional Stage (PAB, PEM, PSS, PFO, REM, LEM...)
 - ❑ Buffer Successional Stage (dominant land use or wetland + forest “age”)
 - ❑ Photograph (at least one of typical view)
 - ❑ Qualitative Condition Rating (BPJ from least disturbed-1 to highly disturbed-6: used to check computed score)
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(Unified) Mid-Atlantic RAP Variables (cont'd)

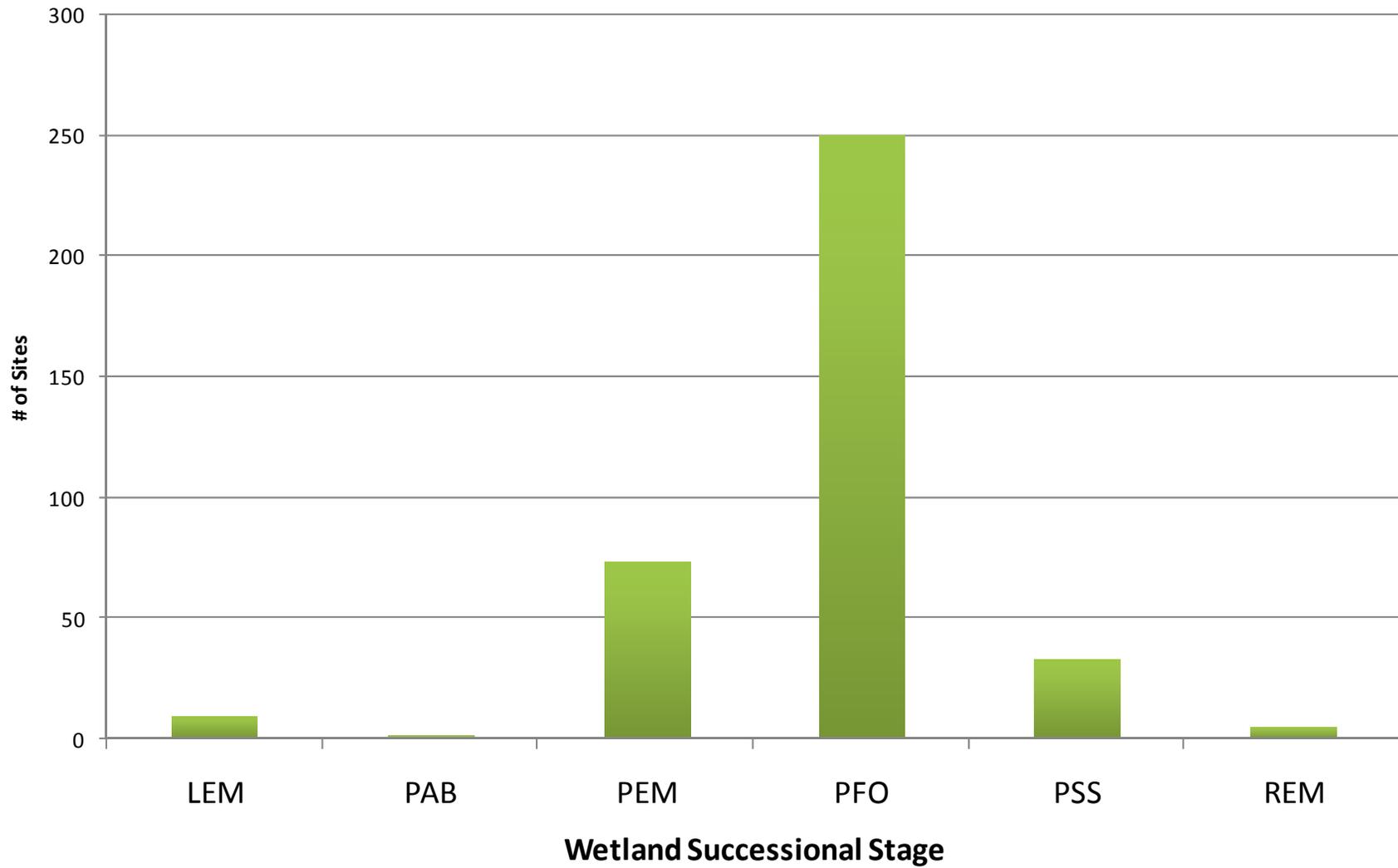
- Scoring factors (*scoring numerics to be finalized*)
 - Buffer (dominant land use, + forest “age”)
 - % Invasive Plant Spp.(0-5, 5-20, 20-50, >50; dom. spp.)
 - Stressor Checklist (separately for AA and Buffer):
 - Hydrologic modification (ditch, fill, dead trees, stormwater, roads)
 - Sedimentation (deposits, intensive grazing, active construction...)
 - Vegetation alteration (mowing, mod. grazing, brush cutting...)
 - Eutrophication (discharges, heavy algal mats...)
 - Contaminant/Toxicity (point discharges, severe veg. stress, chemical odor)



Landscape Profile for All Sites (clumped by subclass) (2008 & 2009)

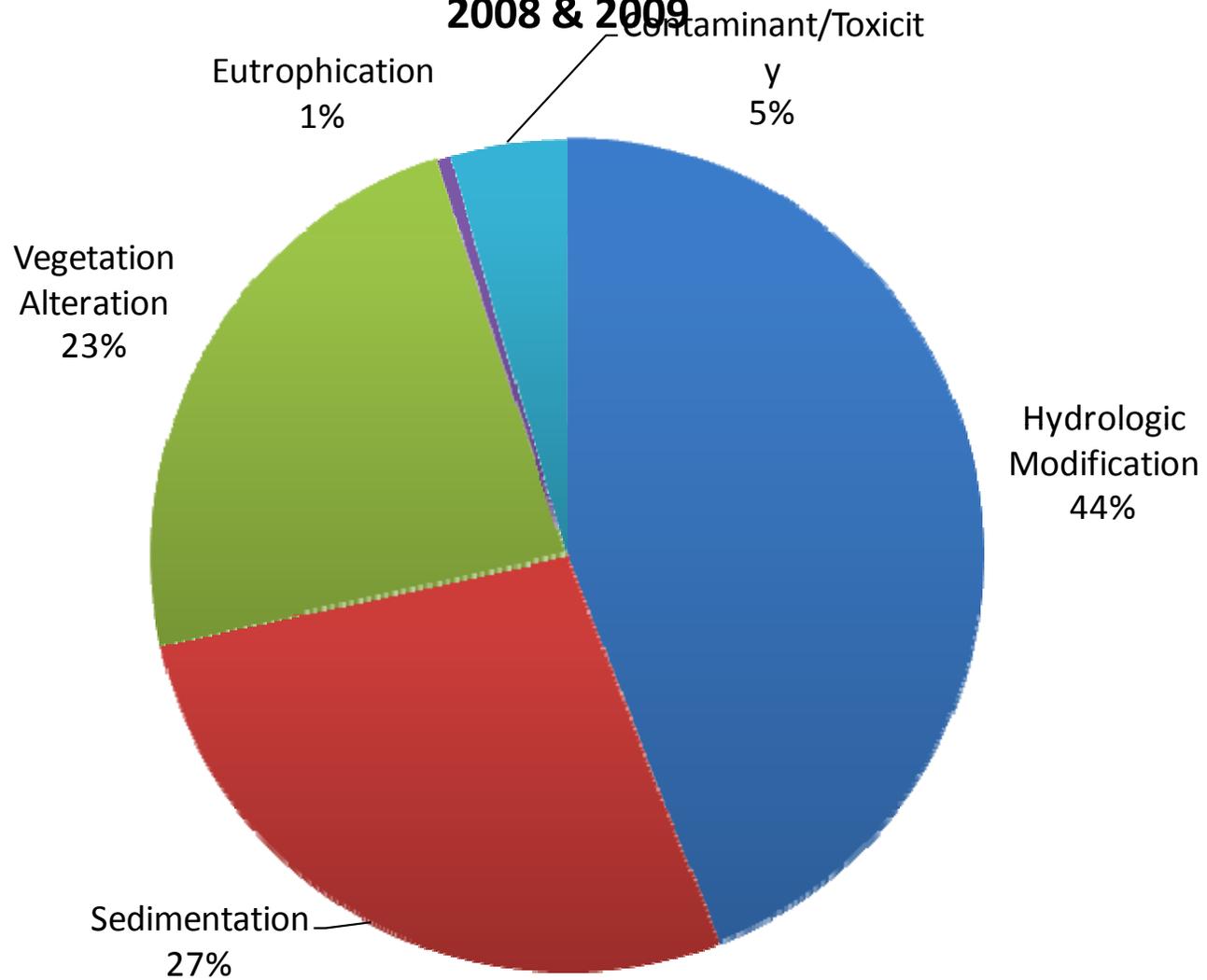


Wetland Successional Stage (All Sites)

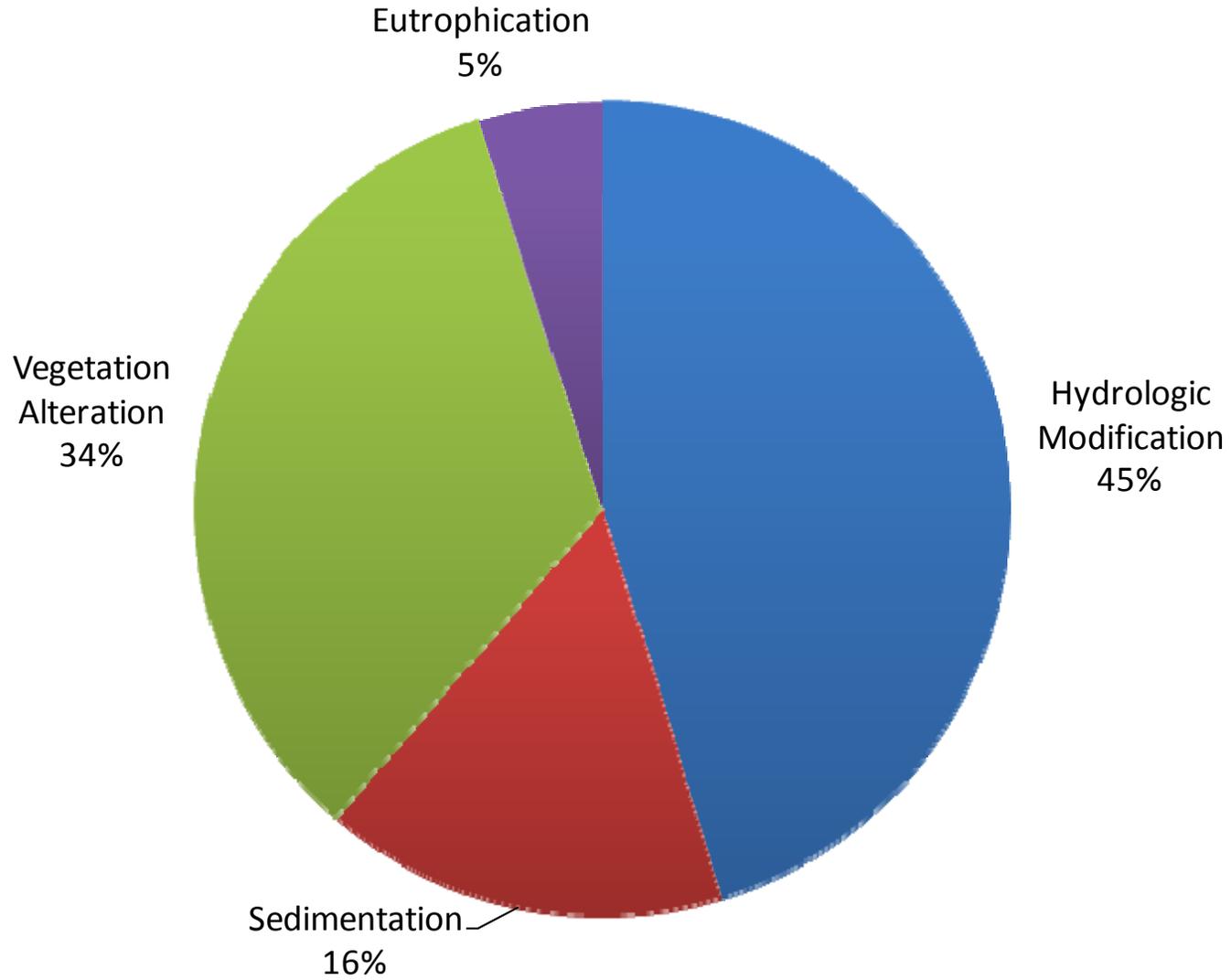


Total Stressors for All Sites

2008 & 2009

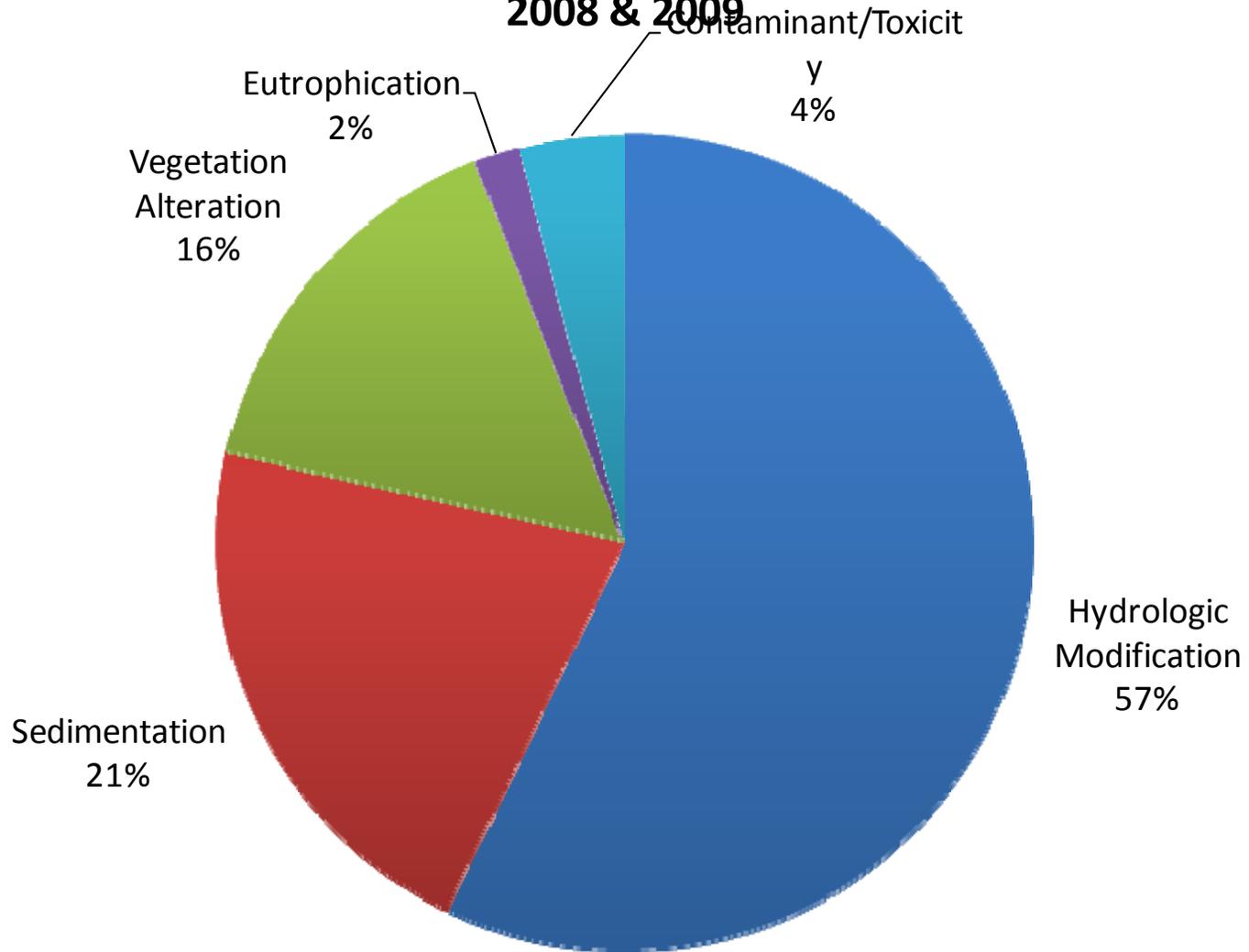


Total Stressors for CP 2008 & 2009

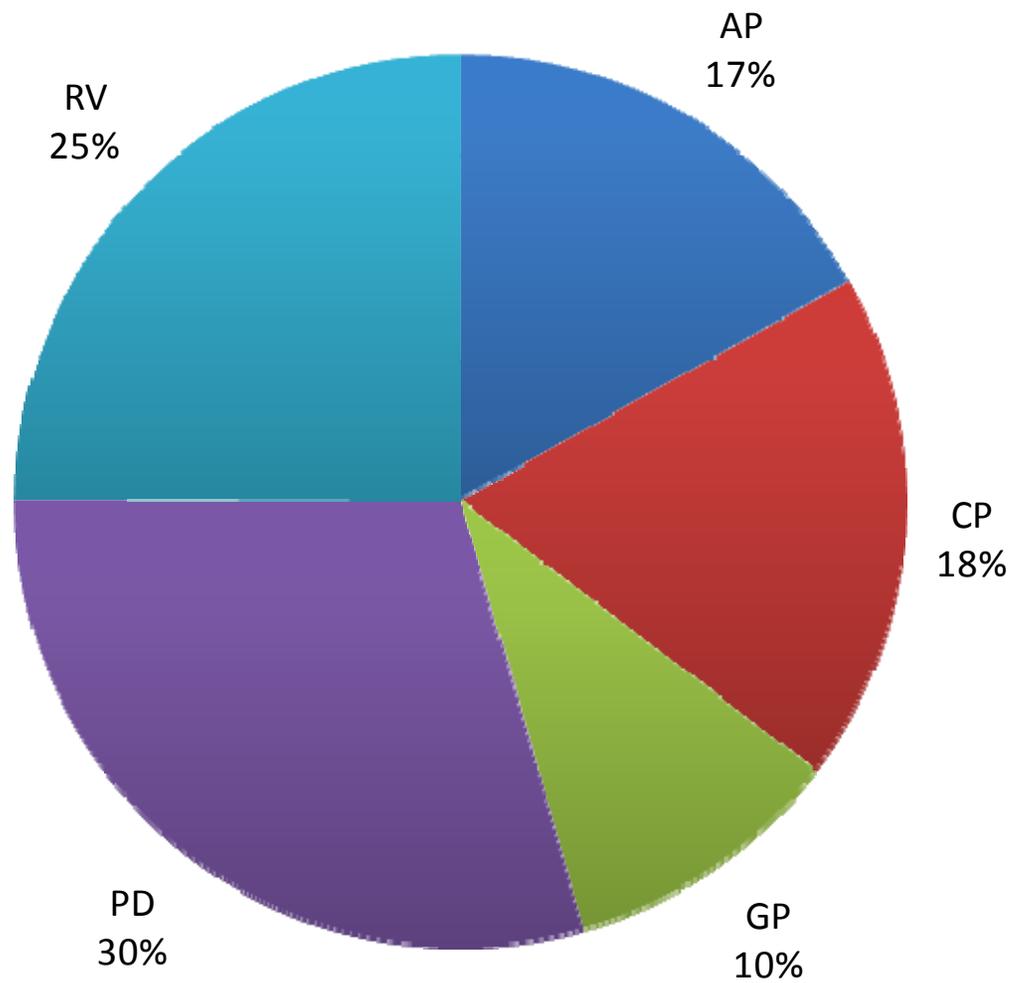


Total Stressors for GP

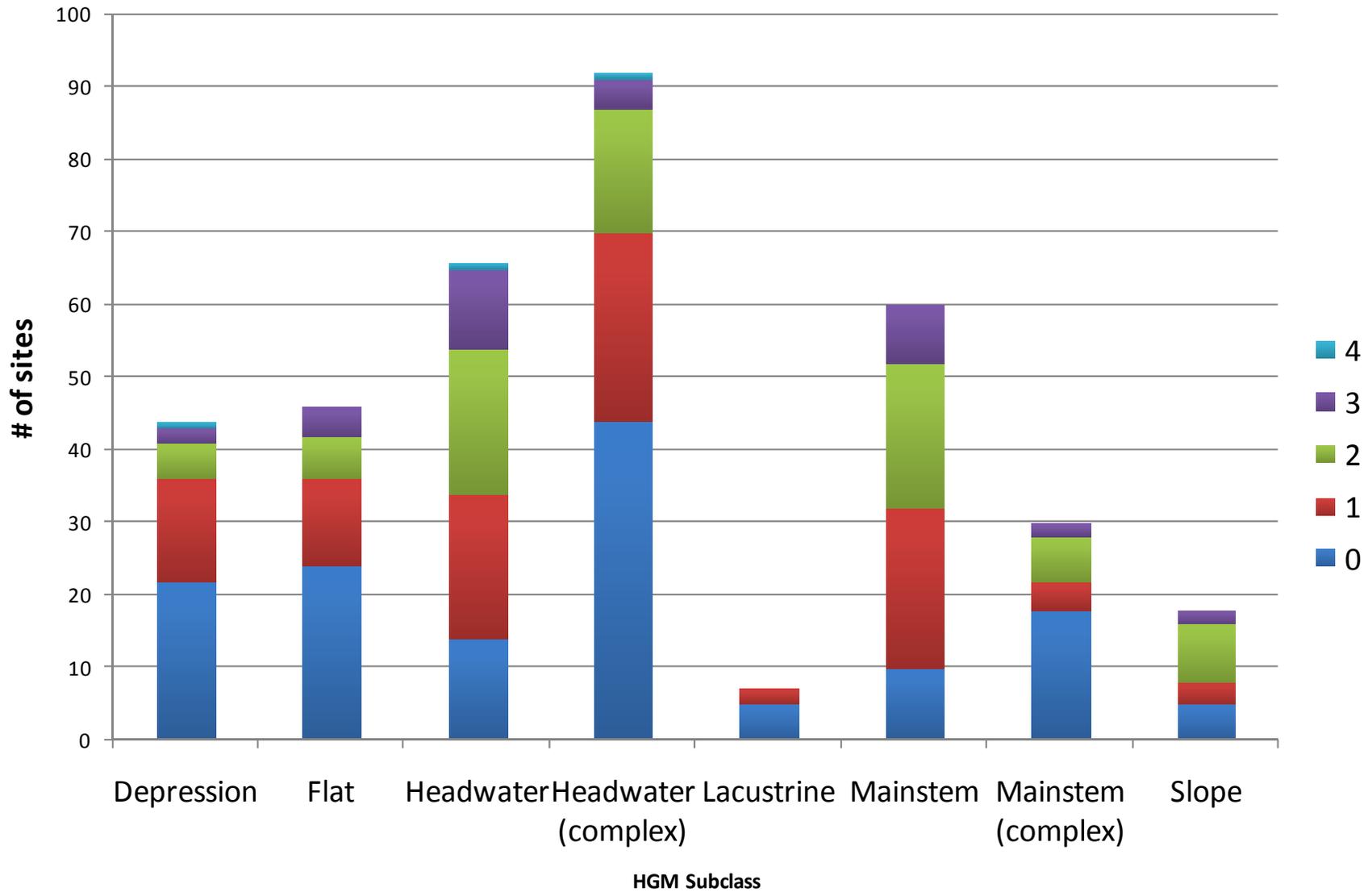
2008 & 2009



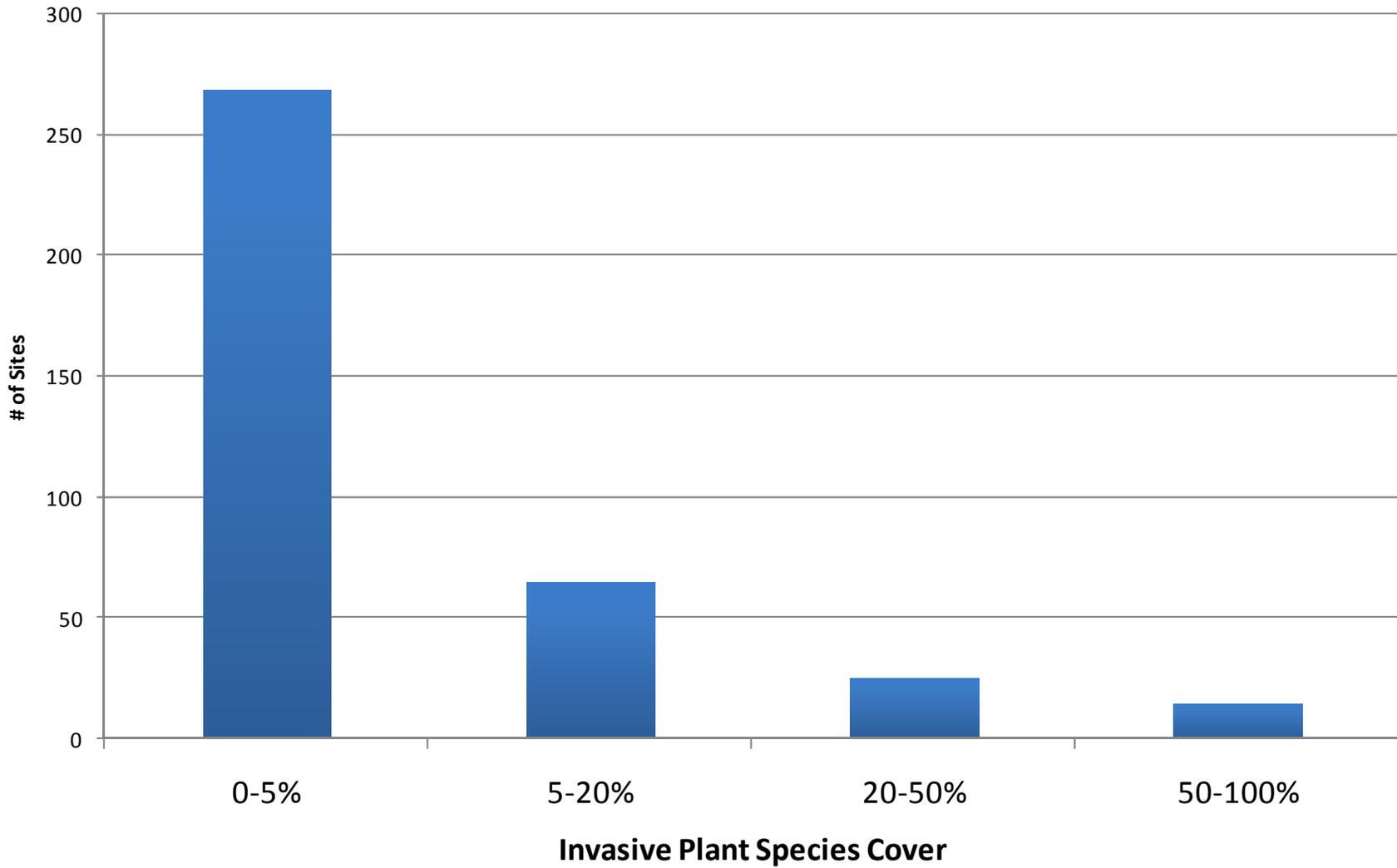
Total Stressors for All Sites by Ecoregion 2008 & 2009



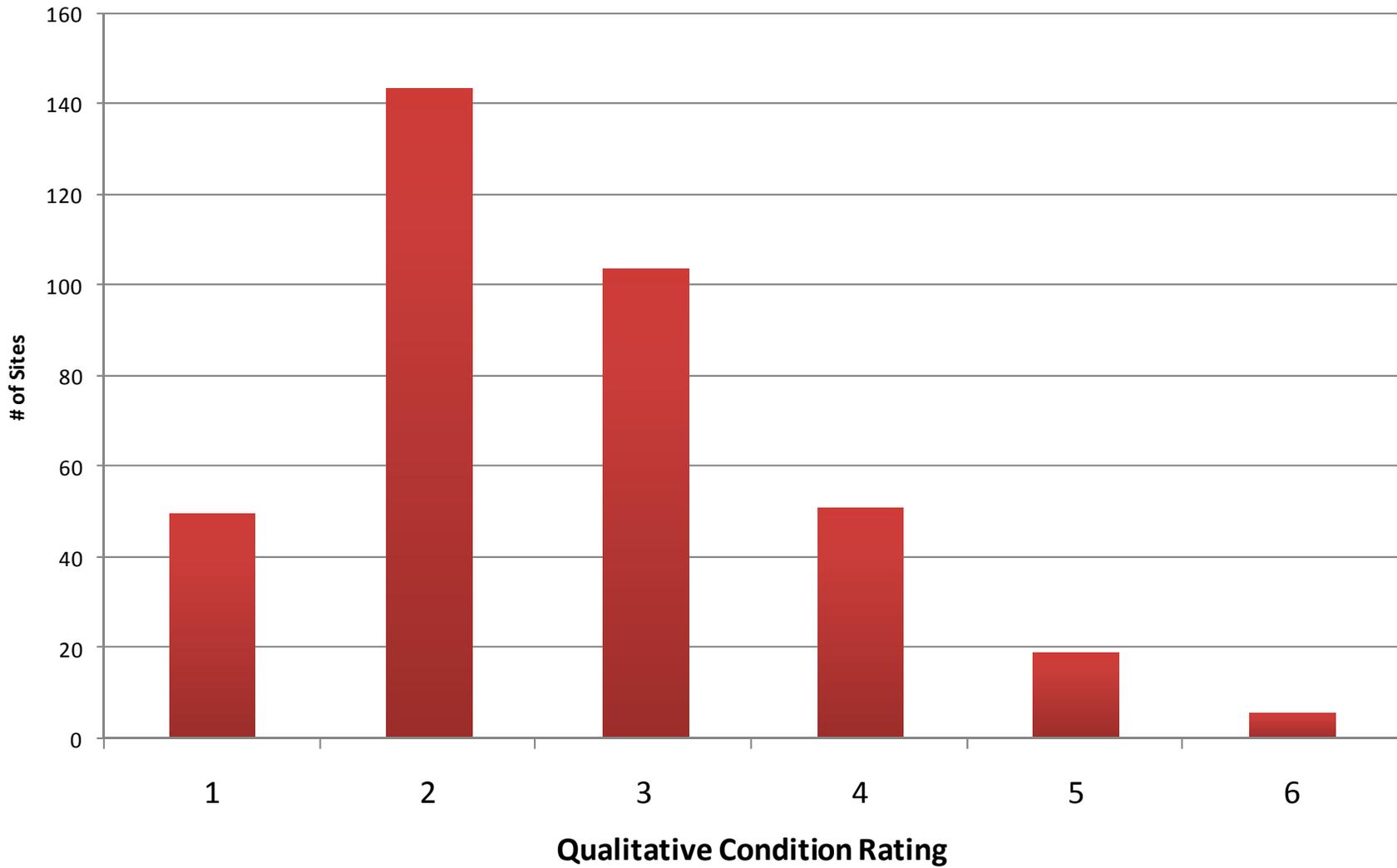
Total AA Stressor Category Occurrence by HGM Subclass



Invasive Plant Species Cover (All Sites)



Qualitative Condition Rating (All Sites, 1=highest)



Next steps

- Finalize scoring procedures for Unified Mid-Atlantic RAP (working with Mary Kentula, EPA-ORD on scoring)
 - Calibrate landscape assessment models for remaining ecoregions
 - using available Level-3 Intensive data from reference wetlands
 - Continue to update MAWWG members 2x/yr
 - Compile final results as Mid-Atlantic RAP Index
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Thanks

- Mary Kentula/Tony Olsen – USEPA ORD/EMAP
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 - MAWWG Member States
 - Pennsylvania
 - Delaware
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 - Virginia
 - West Virginia
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