

Refocusing Cumulative Effects Assessment

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Cumulative Effects Assessment

- EIA – '60s / '70s
- CEA – '80s – CEARC in Canada
- requirements to assess CEs – 80's – 90's onward
- 20 – 30 years of experience with CEA
- performance to date is hugely disappointing

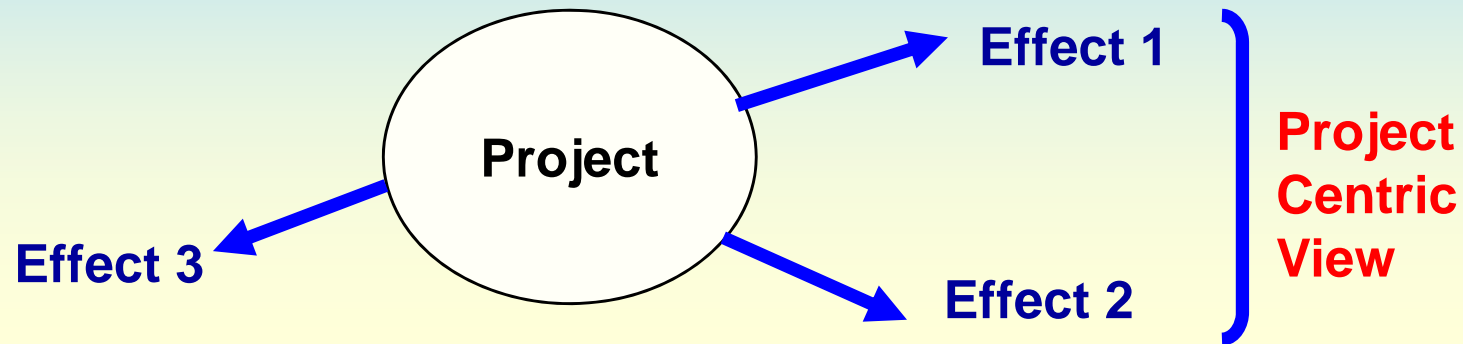
1994 Cumulative Effects Conference (Calgary, AB)

"The environmental effects of concern to thinking people are, simply put, not the effects of a particular project; they are the cumulative effects of everything. Hence it is essential logically to address cumulative effects if one wishes to consider the environmental effects of development projects." (Bill Ross)

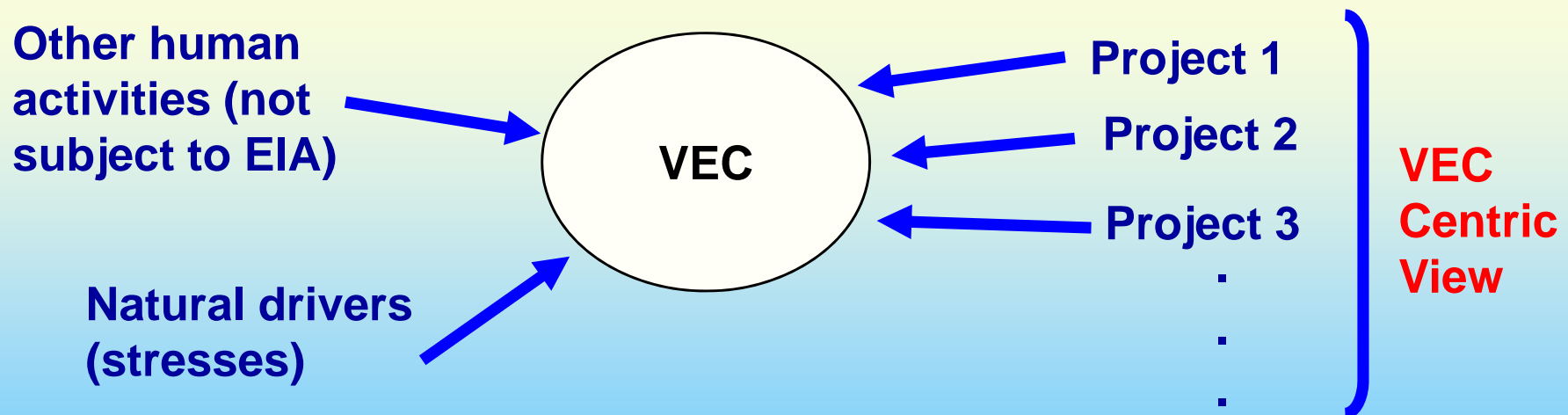
What's the Big Deal? "CEA is just EIA done right CEA is what EIA was meant to be!" (Peter Duinker)

EIA vis-à-vis CEA

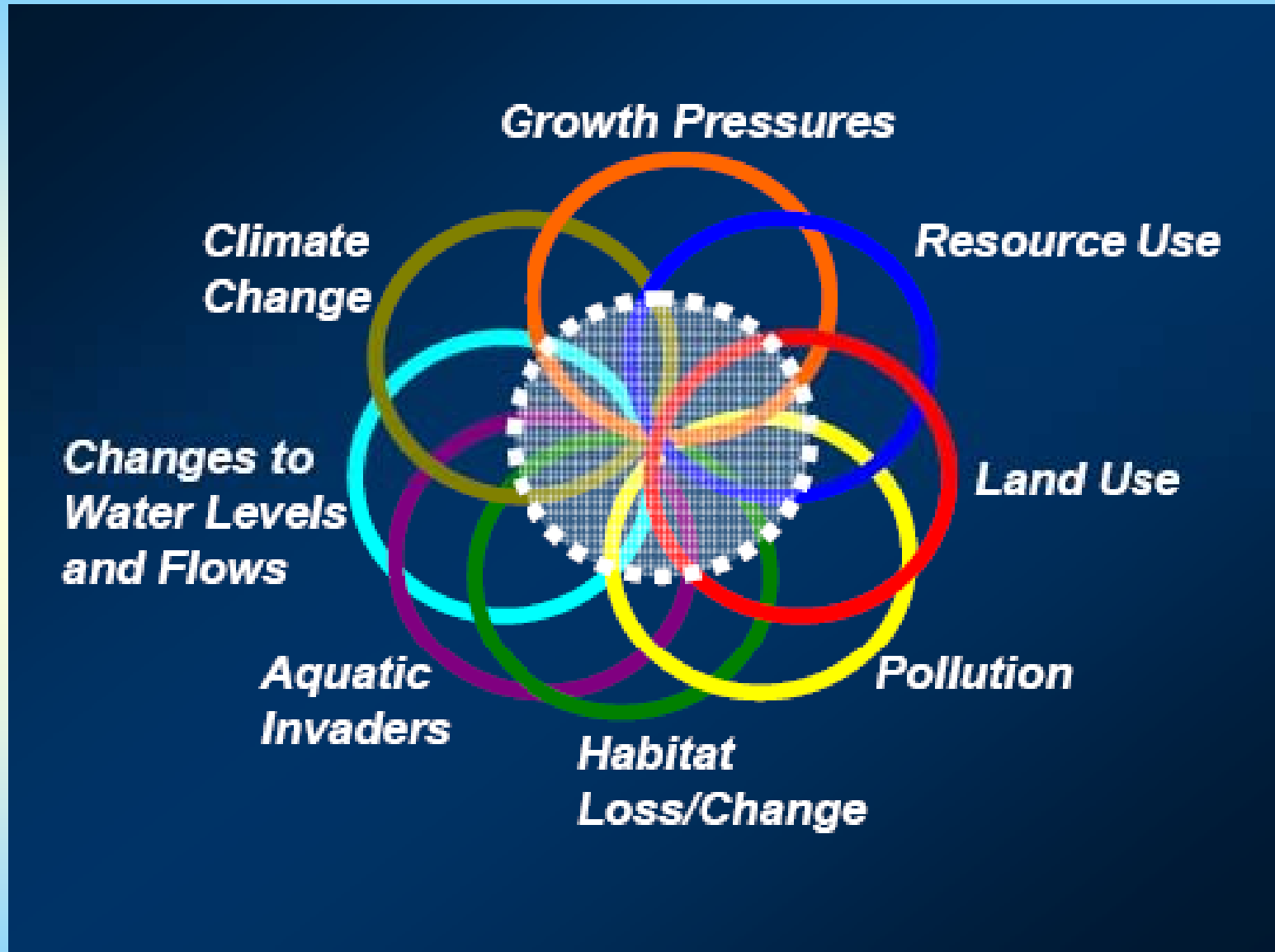
1. Understand how to design a project to reduce environmental effects



2. Understand the consequences of development for VEC sustainability



Great Lakes - Cumulative Effects

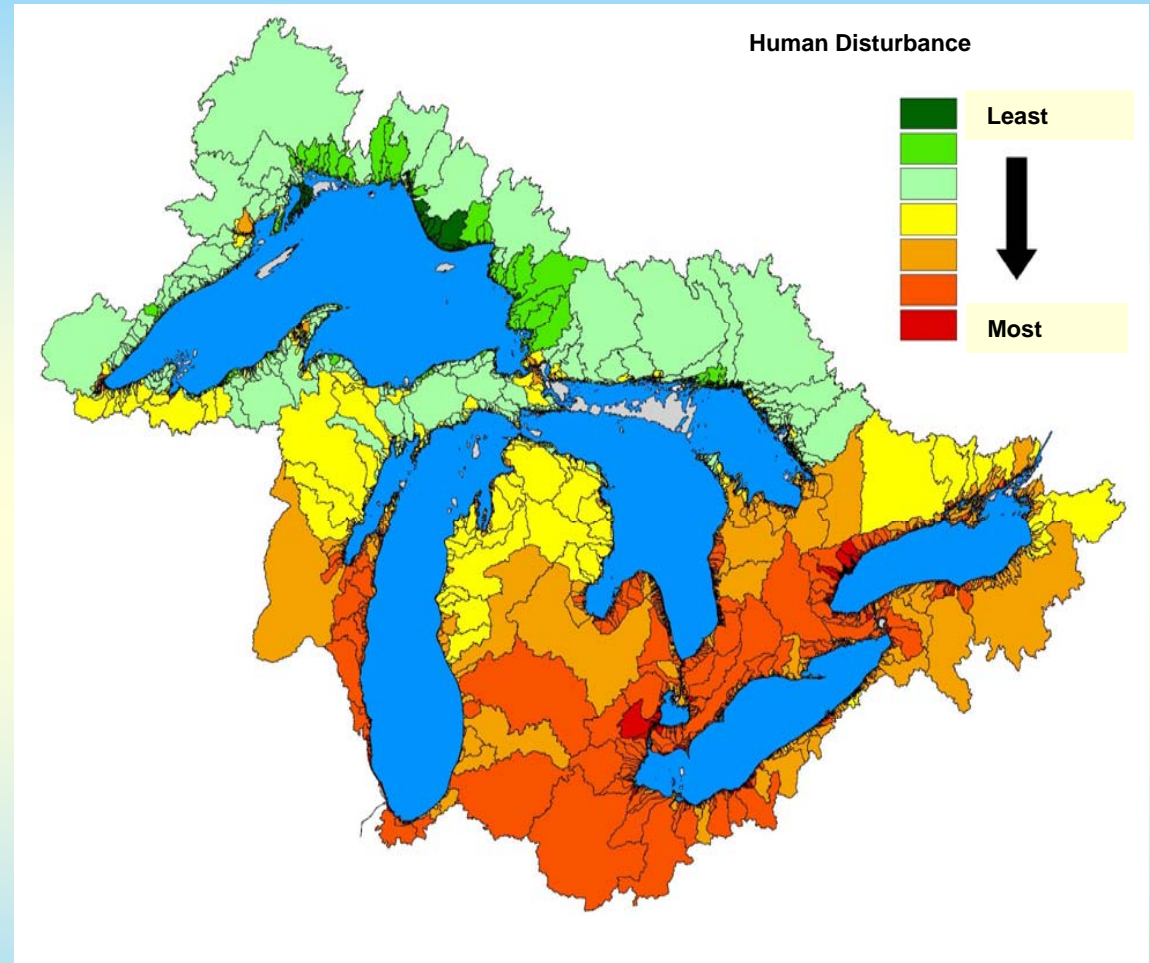


Great Lakes - Cumulative Effects

Environmental condition of coastal watersheds

Land-based stressors driving the “state” of the Great Lakes’ ecological integrity:

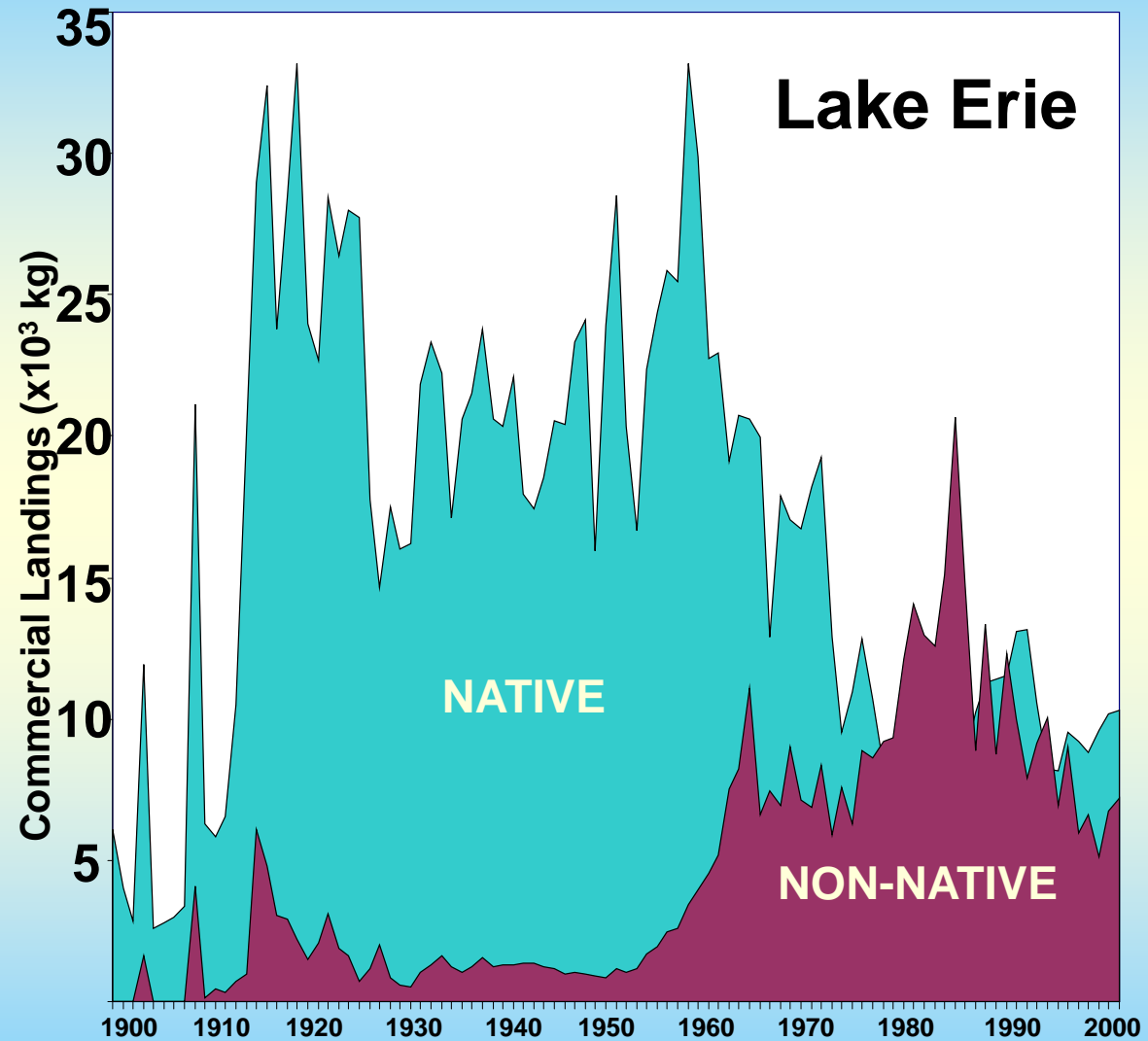
- Agriculture (most),
- Land cover loss,
- Population density,
- Atmospheric deposition,
- Point source discharge,
- Shoreline modification



Source: Jan Ciborowski, pers. comm., USEPA Great Lakes Environmental Indicators Research Collaboration

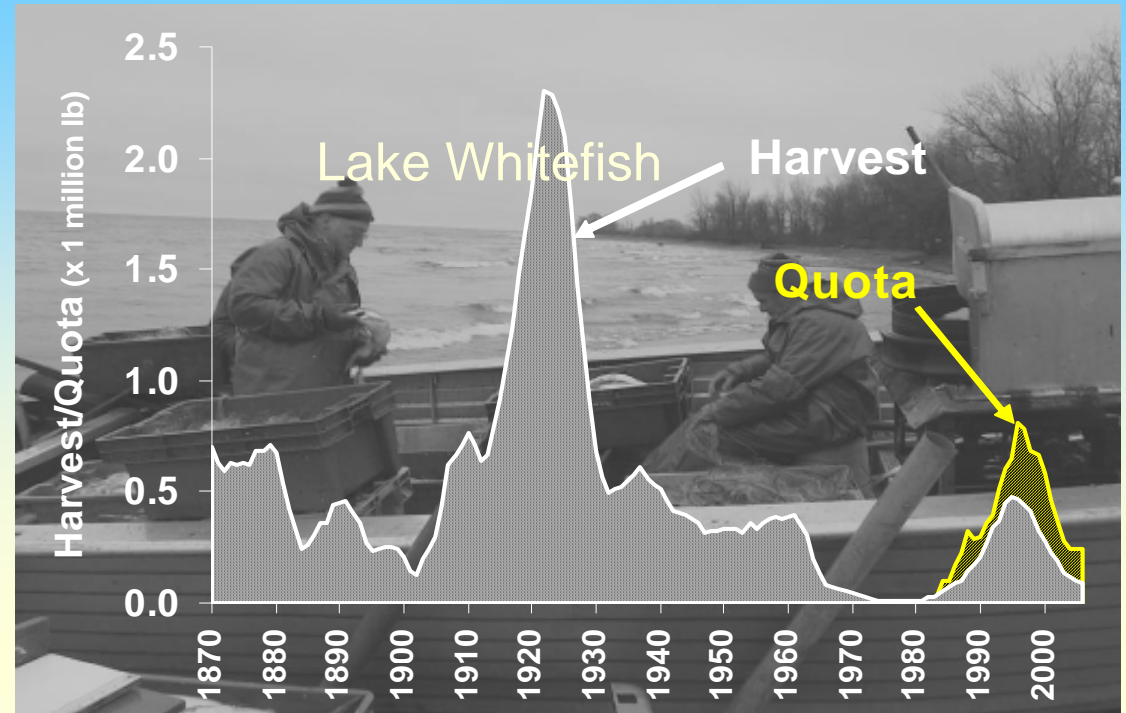
Aquatic Invaders

- 185 known aquatic non-native species are established in the Great Lakes
- Invasive mussels are decimating the lower-food web and reducing fish production
- Routes of entry are deliberate & accidental - shipping is the greatest source
- Invasive pathogens and parasites are significantly adding to the uncertainty, concern (e.g.. VHS)
- Sea Lamprey (decimated Lake Trout) – now reduced by 90% through intensive management



Imperilled Fisheries

- Changing food web and available energy in the near shore and offshore are emblematic of how historic challenges are interacting with others and emerging in new ways



A Way Forward

Refocus CEA at regional level targeted at assessment of VEC sustainability

- Science that is focused on CEA – outside of project specific assessment
- VEC centric analysis
- Largely relieve project EIA from CEA – except for mitigation, large projects
- Thresholds - limits on VEC stress tolerance

Strengthen the Scientific Practice of EIA

- Institute for Environmental Monitoring & Research, Labrador
- Canadian Water Network – Framework for Watershed CEA
- Experimental Lakes Research Centre

Cumulative Effects Management ??

Great Lakes

- *With the possible exception of Lake Superior, the Great Lakes are judged to be in a condition of impaired health (Hecky for the GLFC, 2008)*
- Despite past successes, today we find ourselves struggling to sustain these gains—remediation is long term, costly and will not be enough (OMNR)

Avoidance

“...cumulative effects assessment has little practical value unless it is in relation to allowable limits within regional carrying capacity.” (Rees 1992)