



Northeast Floristic Quality Assessment Workshop May 1, 2013





FQA Concept

- Standardized method to assess ecological condition that uses multiple indices
- Common variable – Coefficient of Conservatism
 - Expert assigned value
 - Based on a species ‘conservatism’
 - propensity to occur in human-altered systems
 - fidelity to a narrow range of ecological conditions
 - highly disturbed, low-quality natural areas or sites of anthropogenic origin have few, if any, surviving conservative plants (Rocchio, 2013)

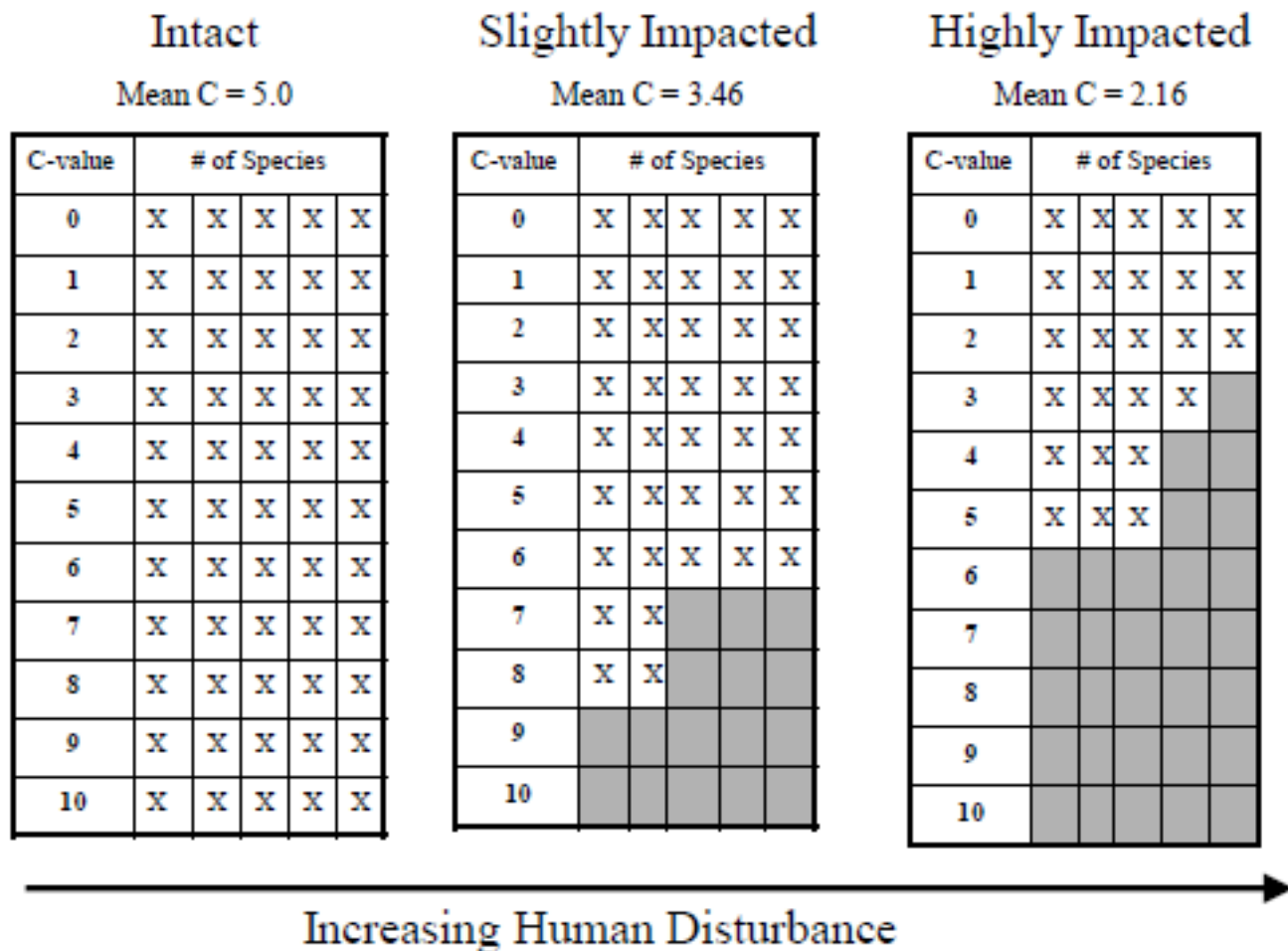


Figure 1. Theoretical Example of Relationship of Mean C to Human Disturbance

Table 3. Indices Included in the Western Washington FQA Calculator

Metric	Notation	Definition
Mean C (native species)	\bar{c}_n	$\sum C_i \div N$
Mean C (all species)	\bar{c}_{all}	$\sum C_j \div S$
Mean C (native trees)	\bar{c}_{trees}	Same as \bar{c}_n except limited to native tree species
Mean C (native shrubs)	\bar{c}_{shrubs}	Same as \bar{c}_n except limited to native shrub species
Mean C (native herbaceous)	\bar{c}_{herbs}	Same as \bar{c}_n except limited to native herbaceous species
FQAI (native species)	FQIn	$\bar{c}_n * \sqrt{N}$
FQAI (all species)	FQIall	$\bar{c}_{all} * \sqrt{S}$
Adjusted FQAI*	AFQI	$\left\{ \frac{\bar{c}_n}{10} * \frac{\sqrt{N}}{\sqrt{S}} \right\} * 100$
% intolerant (C value ≥ 7)	$\bar{c}_n \geq 7$	Same as \bar{c}_n except limited to species with C values ≥ 7
% tolerant (C value ≤ 3)	$\bar{c}_n \leq 3$	Same as \bar{c}_n except limited to species with C values $n \leq 3$
Species richness (all species)	S	Total number of all (native + nonnative) vascular plant species
Species richness (native species)	N	Total number of native vascular plant species
% nonnative		Percentage of nonnative species relative to S
Wet Indicator (all species)	$\bar{W}I_{all}$	$\sum W_{Ij} \div S$
Wet Indicator (native species)	$\bar{W}I_n$	$\sum W_{Ii} \div N$
% hydrophytes		% of species with wetland indicator status of OBL or FACW relative to S
% native perennial		% of native perennial species relative to S
% native annual		% of native annual species relative to S
% annual		% of annual species relative to S
% perennial		% of perennial species relative to S
# of moderate fidelity prairie species		number of species with moderate fidelity to western Washington/Willamette valley prairies
# of high fidelity prairie species		number of species with high fidelity to western Washington/Willamette valley prairies
% native forbs		% of native forb species relative to S
% native graminoids		% of native graminoid species relative to S



Northeast CoC Development

- National Wetland Development Grant ('08)
- Competitive contracts for 9 botanists in early 2010
- Protocol and orientation meeting in March 2010 for botanists which resulted in guidelines and regional CoC numeric value ranges.
- Wrap up meeting in February 2011
- State CoC lists on NEBAWWG website
- Publication - Northeast Naturalist special issue



Coefficients of Conservatism (CoC)

0	Non-native with wide range of ecological tolerances. Often are opportunistic of intact undisturbed habitats.
1-2	Native invasive or widespread native not typical of a particular plant community. Tolerant of anthropogenic disturbance.
3-5	Native, intermediate range of ecological tolerance, may typify a stable native community, but also persists under some anthropogenic disturbance.
6-8	Native, narrow ecological tolerances and typically associated with stable community
9-10	Native, very narrow range of ecological tolerances, high fidelity to particular habitat conditions, sensitive to anthropogenic disturbance



Potential Uses

- Evaluate restoration and mitigation success
- Assist in the prioritization of sites of conservation interest
- Assist in identification of high quality natural areas
- Assist in identification of least altered condition
- Alternative to relying on high species richness or presence of rare species to value areas for protection

*Note: Not a stand alone assessment of quality/
condition*



Workshop Goals

- 1) Discuss programs that are currently testing FQA in the Northeast Region
- 2) Discuss the CoC list and identify potential problems and solutions, and clean-up needs
- 3) Identify next steps/potential projects that would assist state programs that are interested in using FQA