Example- conversion from expert panel habitat functions to habitat quality (survival) changes for a sample population

Example Expert Panel habitat function table

Population	Assessment Unit	Limiting Factor	Initial Habitat Function (Low Bookend)	ESTIMATED HABITAT FUNCTION CHANGES FOR NEXT 3-YEAR IMPLEMENTATION CYCLE		High Bookends		Limiting Factor Weight (I)
				2018	2033	2018	2033	
Steelhead Example population	AU #1	Lack of passage - Lack of access to diversity of habitats.	50	60	60	75	85	50
	AU #1	Loss of riparian vegetation and complexity - lack of stream shading resulting in elevated temperatures	60	62	64	70	80	20
	AU #1	Sediment from roads, timber harvest, cattle grazing,- effects on rearing and spawning success, interstitial space and pool volume.	40	40	40	55	65	30
	AU #2	High summer water temperature	50	55	57	60	75	25
	AU #2	Lack of passage - Lack of access to diversity of habitats,	60	65	65	75	85	25
	AU #2	Loss of riparian function from grazing and floodplain development	40	43	46	50	65	25
	AU #2	Sediment from upstream sources	60	60	60	70	80	25
	AU #3	Lack of passage - Lack of access to diversity of habitats.	65	70	70.4	75	85	40
	AU #3	Loss of riparian vegetation and complexity - lack of stream shading resulting in elevated temperatures	60	66.4	71	80	85	10
	AU #3	Reduced channel complexity from streamside roads, reduced LWD & historic dredge mining	60	60	60.4	65	75	10
	AU #3	Sediment from roads, timber harvest, cattle grazing,- effects on rearing and spawning success, interstitial space and pool volume	50	55.6	58.4	65	75	40

Population	Assessment Unit	Limiting Factor	Initial Habitat Function (Low Bookend)	ESTIMATED HABITAT FUNCTION CHANGES FOR NEXT 3-YEAR IMPLEMENTATION CYCLE		High Bookends		Limiting Factor Weight (I)
				2018	2033	2018	2033	
Steelhead Example population	AU #4	Lack of passage - Lack of access to diversity of habitats,	30	42	43	90	95	40
	AU #4	Loss of riparian vegetation and complexity - lack of stream shading resulting in elevated temperatures	60	65	69.6	70	75	10
	AU #4	Sediment from roads, timber harvest, cattle grazing, and historic mining - effects on rearing and spawning success, interstitial space and pool volume.	40	45	46	55	70	50
	AU #5	Lack of passage - Lack of access to diversity of habitats	80	80.2	80.4	85	90	10
	AU #5	Loss of riparian vegetation and complexity	60	60	61	70	80	40
	AU #5	Sediment from roads, timber harvest, cattle grazing, and historic mining - effects on rearing and spawning success, interstitial space and pool volume.	55	55.6	56	65	75	50

Example conversion from Expert Panel habitat functions to habitat quality (survival) changes

Columns E and H contain formulas that calculate the average habitat function for each assessment unit considering limiting factor weight (Expert Panel habitat function table, col I)

Columns F and I apply the egg/smolt survival factor
Columns G and J apply the assessment unit weighting factor

Habitat Quality change from initial to next cycle = col J/col G (from row above)

Percentage change = (column J - 1.0) * 100, or 7.9%

Assessment Unit	Assessment Unit Weight	INITIAL VALUES			ESTIMATED CHANGES FOR NEXT 3-YEAR IMPLEMENTATION CYCLE		
		Average Weighted Initial AU Habitat Function (E)	Col E * egg/smolt survival: steelhead = 0.0004 Chinook= 0.0018 (F)	Habitat Quality Index (G)	Average Weighted AU Habitat Function for Next Cycle (H)	Col H * egg/smolt survival: steelhead = 0.0004 Chinook= 0.0018 (I)	Habitat Quality Index (J)
AU #1	2	49	0.0196	0.0392	54.4	0.02176	0.04352
AU #2	7	52.5	0.021	0.147	55.75	0.0223	0.1561
AU #3	71.7	58	0.0232	1.66344	62.88	0.025152	1.8033984
AU #4	7.4	38	0.0152	0.11248	45.8	0.01832	0.135568
AU #5	12.2	59.5	0.0238	0.29036	59.82	0.023928	0.2919216
Total				2.25248			2.430508
Population Habitat Quality Change							1.07903644

See the 2007 FCRPS Comprehensive Analysis, Appendix C, pp. C-1-13 to C-1-14, for explanations of the calculations shown in this example