Appendix D. FIBI metrics and scoring criteria.

Table D1. Metric information for the Southern Rivers FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Insectivore-Tol_Pct	IndPct	Percent insectivorous individuals (excludes tolerant species)	Tr	P	C	12.01	82.00	
SimpleLithophil	Richness	Number of simple lithophilic taxa, scoring adjusted for gradient	R	P	C	-6.71	2.59	slope=3.945 intercept=11.187
GeneralistFeeder_Pct	IndPct	Percent generalist feeder individuals	Tr	N	C	5.64	64.72	
VeryTolerant_TxPct	TXPct	Percent very tolerant taxa	To	N	C	5.04	33.33	
SerialSpawner_TxPct	TXPct	Percent serial spawner taxa	R	N	C	14.40	38.04	
Tolerant_Pct	IndPct	Percent tolerant individuals	To	N	C	5.38	82.30	
ShortLived_Pct	IndPct	Percent short-lived individuals	LH	N	C	0.83	60.10	
Sensitive_TxPct	TXPct	Percent sensitive taxa, scoring adjusted for gradient	To	P	C	-23.59	15.82	slope=16.042 intercept=33.5
Detritivore_TxPct	TXPct	Percent detritivorous taxa	Tr	N	C	15.38	41.62	
Piscivore	Richness	Number of piscivorous taxa	Tr	P	C	1.00	7.90	
DominanceTwoTaxa_Pct	IndPct	Combined relative abundance of the two most abundant taxa	Comp	N	C	30.39	75.00	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D2. Metric information for the Southern Streams FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
BenthicInsectivore-Tol_TxPct	TXPct	Percent benthic insectivore taxa (excludes tolerant species)	Tr	P	C	0.00	40.00	
Sensitive_TxPct	TXPct	Percent sensitive taxa	To	P	C	0.00	45.11	
Detritivore_TxPct	TXPct	Percent detritivorous taxa	Tr	N	C	14.13	46.38	
ShortLived	Richness	Number of short-lived taxa	LH	N	C	1.00	7.00	
Tolerant_TxPct	TXPct	Percent tolerant taxa	To	N	C	27.99	84.81	
MatureAge<2_Pct	IndPct	Percent early-maturing individuals	R	N	C	29.68	97.68	
Tolerant_Pct	IndPct	Percent tolerant individuals	To	N	C	27.93	75.00	
DominanceTwoTaxa_Pct	IndPct	Combined relative abundance of the two most abundant taxa	Comp	N	C	34.00	75.00	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D3. Metric information for the Southern Headwaters FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Sensitive	Richness	Number of sensitive taxa	To	P	C	0.00	4.00	
Detritivore_TxPct	TXPct	Percent detritivorous taxa	Tr	N	C	0.00	50.00	
GeneralistFeeder_TxPct	TXPct	Percent generalist feeder taxa	Tr	N	C	31.92	76.53	
SerialSpawner_Pct	IndPct	Percent serial spawner individuals	R	N	C	0.00	76.92	
VeryTolerant_TxPct	TXPct	Percent very tolerant taxa	To	N	C	0.00	58.71	
ShortLived_Pct	IndPct	Percent short-lived individuals	LH	N	C	0.14	98.73	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D4. Metric information for the Northern Rivers FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Sensitive_TxPct	TXPct	Percent sensitive taxa, scoring adjusted for gradient	To	P	C	-16.39	7.04	slope=11.902 intercept=43.121
Sensitive_Pct	IndPct	Percent sensitive individuals, scoring adjusted for gradient	To	P	C	-33.70	17.75	slope=22.503 intercept=51.121
Detritivore_Pct	IndPct	Percent detritivorous individuals	Tr	N	C	0.39	46.93	
VeryTolerant_TxPct	TXPct	Percent very tolerant taxa	To	N	C	0.00	20.00	
Exotic_Pct	IndPct	Percent exotic individuals	Comp	N	D			≥10% = 0 ≥5% = 5 <5% = 10
SerialSpawner_TxPct	TXPct	Percent serial spawner taxa	R	N	C	8.70	29.22	
Insectivore-Tol_Pct	IndPct	Percent insectivorous individuals (excludes tolerant species)	Tr	P	C	28.94	74.99	
NonLithophilicNester_Pct	IndPct	Percent non-lithophilic nest-building individuals	R	N	C	8.74	46.14	
SimpleLithophil_TxPct	TXPct	Percent simple lithophilic taxa	R	P	C	26.28	48.32	
DominanceTwoTaxa_Pct	IndPct	Combined relative abundance of the two most abundant taxa	Comp	N	C	34.86	50.00	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D5. Metric information for the Northern Streams FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Sensitive_TxPct	TXPct	Percent sensitive taxa	To	P	C	5.69	44.00	
Intolerant_Pct	IndPct	Percent intolerant individuals	To	P	C	0.00	41.98	
Insectivore-Tol_TxPct	TXPct	Percent insectivorous taxa (excludes tolerant species)	Tr	P	C	26.12	50.50	
MatureAge>3-Tol_Pct	IndPct	Percent late-maturing individuals (excludes tolerant species)	R	P	C	0.00	34.09	
GeneralistFeeder	Richness	Number of generalist taxa	Tr	N	C	2.20	7.00	
SerialSpawner_TxPct	TXPct	Percent serial spawner taxa	R	N	C	6.25	33.33	
Detritivore_Pct	IndPct	Percent detritivorous individuals	Tr	N	C	1.01	38.98	
VeryTolerant	Richness	Number of very tolerant taxa	To	N	C	1.00	5.00	
DarterSculpinSucker_TxPct	TXPct	Percent darter, sculpin, and sucker taxa	Comp	P	C	6.42	27.78	
SimpleLithophil_Pct	IndPct	Percent simple lithophilic individuals	R	P	C	3.11	67.34	
DominanceTwoTaxa_Pct	IndPct	Combined relative abundance of the two most abundant taxa	Comp	N	C	37.64	50.00	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D6. Metric information for the Northern Headwaters FIBI

Name	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Sensitive	Richness	Number of sensitive taxa	To	P	C	0.00	4.00	
Minnow-Tol_Pct	IndPct	Percent cyprinid individuals (excludes tolerant species)	Comp	P	C	0.00	51.48	
Insectivore-Tol_TxPct	TXPct	Percent insectivorous taxa (excludes tolerant species)	Tr	P	C	0.00	42.87	
NumPerMeter-Tol	CPUE	Number of fish per meter (excludes tolerant species)	Comp	P	C	0.01	1.82	
InsectivorousCyprinid_Pct	IndPct	Percent insectivorous cyprinid individuals	Tr	P	C	0.00	20.85	
HeadwaterSpecialist-Tol	Richness	Number of headwater taxa (excludes tolerant taxa)	H	P	C	0.00	3.00	
DarterSculpin	Richness	Number of darter and sculpin taxa	Comp	P	C	0.00	2.00	
SimpleLithophil	Richness	Number of simple lithophilic taxa	R	P	C	0.00	4.28	
Tolerant_TxPct	TXPct	Percent tolerant taxa	To	N	C	33.33	80.00	
Pioneer_TxPct	TXPct	Percent pioneer taxa	LH	N	C	10.00	33.33	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D7. Metric information for the Low Gradient FIBI

Name	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Minnow-Tol_Pct	IndPct	Percent cyprinid individuals (excludes tolerant species)	Comp	P	C	0.00	52.29	
Wetland-Tol	Richness	Number of wetland taxa (excludes tolerant species)	H	P	C	0.00	4.10	
Sensitive	Richness	Number of sensitive taxa	To	P	C	0.00	4.00	
NumPerMeter-Tol	CPUE	Number of fish per meter (excludes tolerant species)	Comp	P	C	0.00	1.89	
HeadwaterSpecialist-Tol_Pct	IndPct	Percent headwater individuals (excludes tolerant species)	H	P	C	0.00	34.77	
SimpleLithophil	Richness	Number of simple lithophilic taxa	R	P	C	0.00	4.00	
Ominivore_TxPct	TXPct	Percent omnivorous taxa	Tr	N	C	0.00	40.00	
Tolerant_TxPct	TXPct	Percent tolerant taxa	To	N	C	33.33	85.80	
Pioneer_TxPct	TXPct	Percent pioneer taxa	LH	N	C	0.00	35.71	
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	composition	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D8. Metric information for the Southern Coldwater FIBI

Name	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
ColdwaterNative_Pct	IndPct	Percent native, coldwater individuals	H	P	C	0.00	1.96	(log10 +1) transformation of values prior to scoring
SensitiveColdwater_Pct	IndPct	Percent sensitive individuals (specific to coldwater streams, adjusted for drainage area)	To	P	C	-76.14	17.59	slope = -27.382 intercept = 114.322
Detritivore_TxPct (SDet_TxPct)	TXPct	Percent taxa that consume detritus as part of their diet (adjusted for drainage area)	Tr	N	C	-14.35	28.09	slope = 16.211 intercept = -5.276
TolerantColdwater	Richness	Number of tolerant taxa (specific to coldwater streams, adjusted for drainage area)	To	N	C	-1.04	4.24	slope = 1.089 intercept = -0.827
Pioneer_Pct	IndPct	Percent pioneer individuals	LH	N	C	0.00	55.02	
Herbivore_Pct	IndPct	Percent herbivorous individuals	Tr	N	D			≥8.06% = 0 ≥3.07% = 5 <3.07% = 10
ColdwaterNative_TxPct	TXPct	Percent native, coldwater taxa (adjusted for drainage area)	H	P	C	-32.45	28.48	slope = -24.242 intercept = 54.017
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score

Table D9. Metric information for the Northern Coldwater FIBI

Metric	Type	Description	Category	Response	Scoring	Floor	Ceiling	Notes
Coldwater	Richness	Coldwater taxa	H	P	C	0.00	2.00	
IntolerantColdwater_Pct	IndPct	Percent intolerant individuals (specific to coldwater	To	P	C	0.00	83.65	
SensitiveColdwater_TxPct	TXPct	Percent sensitive taxa (specific to coldwater streams, adjusted for gradient)	To	P	C	-27.66	25.90	slope = 23.788 intercept = 24.437
TolerantColdwater_Pct	IndPct	Percent tolerant individuals (specific to coldwater streams)	To	N	C	0.00	1.49	(log10 +1) transformation of values prior to scoring
NonLithophilicNester_Pct	IndPct	Percent non-lithophilic nest-building individuals	R	N	C	0.00	1.68	(log10 +1) transformation of values prior to scoring
Ominivore_TxPct	TXPct	Percent omnivorous taxa	Tr	N	C	0.00	20.00	
Pioneer_TxPct	TXPct	Percent pioneer taxa	LH	N	C	0.00	33.33	
Perciformes_Pct	IndPct	Percent of individuals belonging to Order Perciformes	Comp	N	C	0.00	1.52	(log10 +1) transformation of values prior to scoring
FishDELT_Pct*	IndPct	Percent of individuals with Deformities, Eroded fins, Lesions, Tumors	Comp	N	D			≥4% = -10 ≥2% = -5

*FishDELT_Pct metric is a negative adjustment applied (if applicable) after calculating the composite (0-100 scale) FIBI score