and 300-count samples. For clarity's sake, we refer to Model 6_13784 as the 'NumTaxaIBI' and the alternative model, which contains the percent taxa metric equivalents, as the 'PctTaxaIBI' (Table 12).

The analyses showed the PctTaxaIBI to have similar performance as the NumTaxaIBI (DEs of 97.6 vs. 100, respectively, accounted for by one sample) (Table 13). There were, however, differences in metric scoring formulae. With the PctTaxaIBI, the same metric scoring formulae could be used in 100-, 200-, and 300-count samples in both the MA/SNEP and SNEP datasets, whereas the scoring formulae for the two richness metrics in the NumTaxaIBI would need to be adjusted based on subsample size (Block et al. 2020). Thus, although the NumTaxaIBI (Model 6_13784) was initially selected by the working group through the all-subsets model routine, the PctTaxaIBI alternative was decided upon as the final model in both projects to eliminate the need to adjust metric scoring formula and simplify the application of the IBI across the region. We do, however, recommend 300-count samples (or the highest subsample size resources permit) because those samples do perform better based on z-scores and cv statistics (Table 13) (Block et al. 2020).

*Table 11. The nine best model alternatives (selected by the working group). Metrics used in each alternative are listed as "1". 0 = not included. The model initially chosen by the working group is highlighted in green (Model 6_13784). See Table 8 for metric descriptions.*

| Model ID | 7_49898 | 6_18508 | 7_33461 | 7_31921 | 7_43415 | 6_15092 | **6_13784** | 7_38340 | 7_22450 |
|---|---|---|---|---|---|---|---|---|---|
| nt_CruMol | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| nt_EPT | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 1 |
| nt_POET | 0 | 0 | 1 | 1 | 1 | 1 | **1** | 0 | 0 |
| pt_Amph | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| pt_EPT | 1 | 1 | 0 | 0 | 0 | 0 | **0** | 1 | 0 |
| pt_NonIns | 1 | 1 | 1 | 1 | 1 | 1 | **1** | 1 | 1 |
| pi_habit_swim | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| pt_habit_climb | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| nt_ffg_pred | 0 | 1 | 1 | 1 | 0 | 1 | **1** | 1 | 1 |
| pt_ffg_col | 1 | 0 | 0 | 0 | 1 | 0 | **0** | 0 | 0 |
| pt_volt_multi | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| pt_volt_semi | 1 | 1 | 1 | 1 | 1 | 1 | **1** | 1 | 1 |
| pi_EPT | 0 | 0 | 0 | 1 | 0 | 1 | **0** | 0 | 0 |
| pi_NonIns | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| pi_OET | 1 | 1 | 1 | 0 | 1 | 0 | **1** | 1 | 1 |
| pt_tv_intol | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| pt_tv_toler | 1 | 1 | 1 | 1 | 1 | 1 | **1** | 1 | 1 |
| x_Becks | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 |
| x_HBI | 1 | 0 | 1 | 1 | 1 | 0 | **0** | 1 | 1 |
| Str.DE | 100 | 100 | 100 | 100 | 100 | 100 | **100** | 100 | 100 |
| z | -2.51 | -2.56 | -2.50 | -2.54 | -2.45 | -2.49 | **-2.45** | -2.61 | -2.52 |

*Table 12. Metric codes and names for the index selected by Mass DEP (6_13784). *Denotes the richness metrics that were affected by subsample size. The "alternative" index (PctTaxaIBI) replaces the two richness metrics with percent taxa versions of those metrics.*

| **Index** | **Metric Code** | **Metric Name** |
|---|---|---|
| 6_13784 (NumTaxaIBI) | *nt_POET | number taxa - Orders Plecoptera, Odonata, Ephemeroptera, and Trichoptera (POET) |
| | *nt_ffg_pred | number taxa - Functional Feeding Group (FFG) - predator (PR) |
| | pt_NonIns | percent (0-100) taxa - not Class Insecta |
| | pt_volt_semi | percent (0-100) taxa - semivoltine (SEMI) |
| | pi_OET | percent (0-100) individuals - Orders Odonata, Ephemeroptera, and Trichoptera |
| | pt_tv_toler | percent (0-100) tolerant taxa |
| Alternative (PctTaxaIBI) | | |
| | pt_POET | percent (0-100) taxa - Orders Plecoptera, Odonata, Ephemeroptera, and Trichoptera (POET) |
| | pt_ffg_pred | percent (0-100) taxa - Functional Feeding Group (FFG) - predator (PR) |