Using life-form spectra in forest biodiversity monitoring

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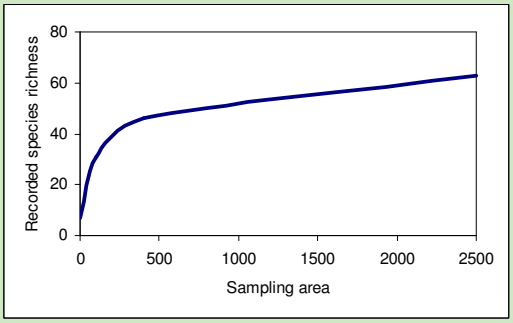
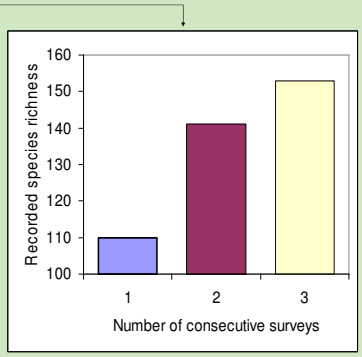
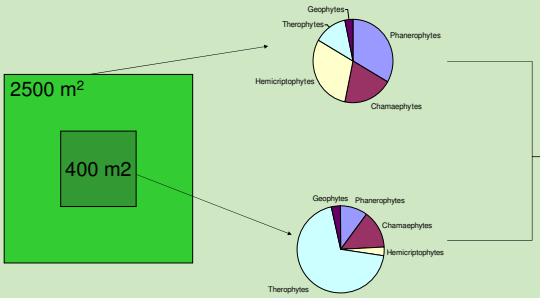
Indicators based on species richness depend on sampling area and intensity





Effect of sampling area on life-form proportions

1 Calculate life-form proportions for different sampling areas → **2** Compare results using statistical tests of difference



P-values of tests of differences among plot and subplot surveys (n=10). The null hypothesis (no difference between surveys) must be rejected for $p < 0.05$

	% phanerophytes	% chamaephytes	% hemicryptophytes	% geophytes	% therophytes	Species richness
Sign test	0.9999	0.3428	0.3428	0.2888	0.5050	**0.0044**
Wilcoxon signed ranks test	0.6835	0.7598	0.7598	0.3586	0.5408	**0.0059**

No significant difference — **Significant difference**

Effect of sampling intensity on life-form proportions

1 Calculate life-form proportions for consecutive surveys → **2** Compare results using statistical tests of difference

1st survey

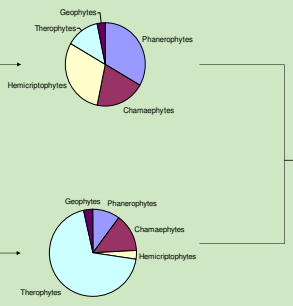
MAY 1999

Sun	Mon	Tue	Wen	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

2nd survey

MAY 2004

Sun	Mon	Tue	Wen	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				



P-values of tests of differences among 1st and 2nd survey (n=10). The null hypothesis (no difference between surveys) must be rejected for $p < 0.05$

	% phanerophytes	% chamaephytes	% hemicryptophytes	% geophytes	% therophytes	Species richness
Sign test	0.1138	0.3427	0.7518	0.1824	0.5049	**0.0044**
Wilcoxon signed ranks test	0.0527	0.4140	0.1851	0.4148	0.1262	**0.0059**

No significant difference — **Significant difference**

Indicators based on life-form proportions have little dependence on sampling area and intensity. This methodological advantage makes them very suitable for monitoring vascular plant communities.