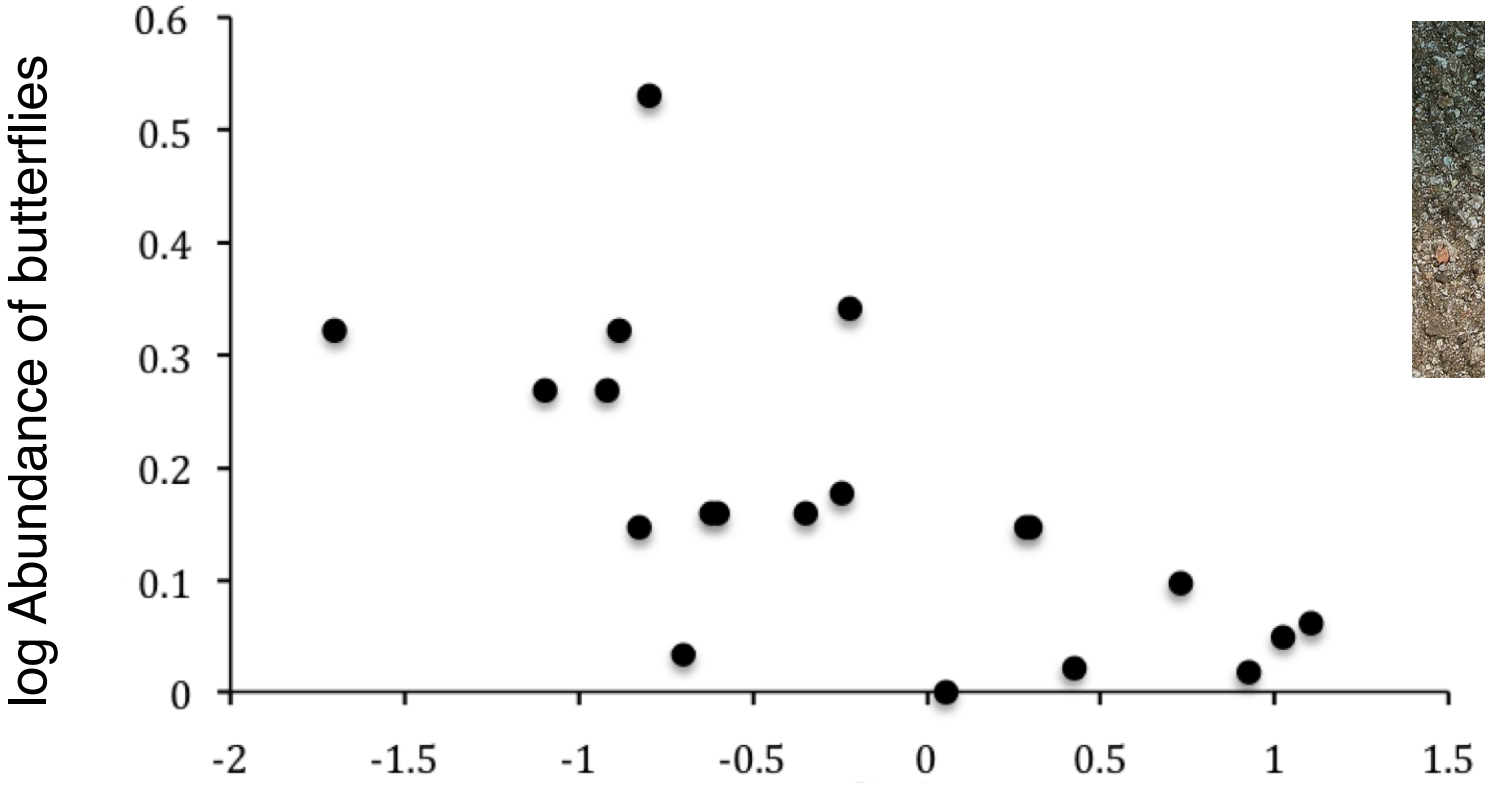
Thickness of litter layer, decomposers and radiation

$F = 28.02$, df = 5, 74, $r^2 = 0.67$, $P < 0.0001$

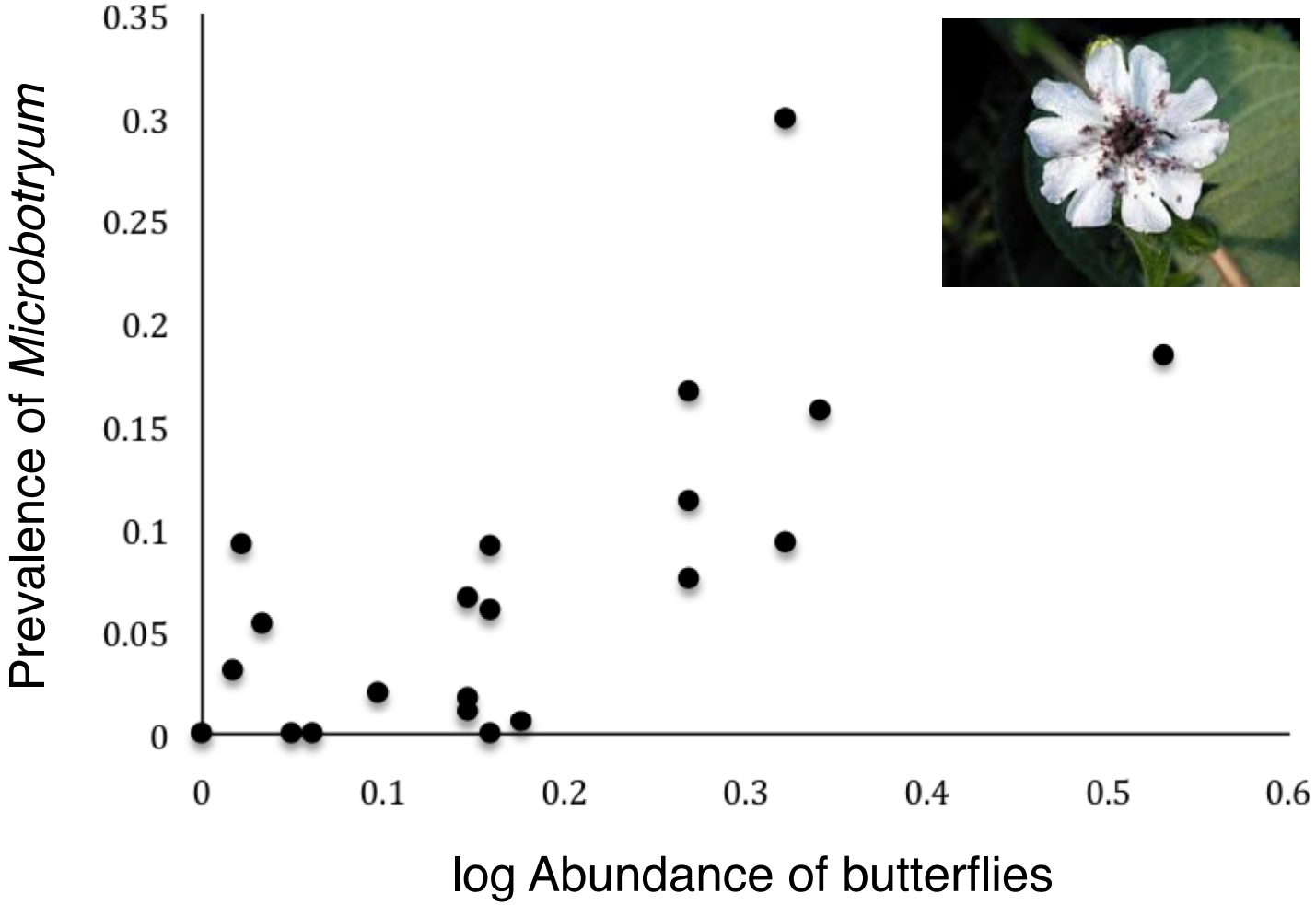
Term	Sum of squares	*F*	*P*	Estimate (SE)
No. ants	0.077	9.180	0.0034	-0.049 (0.016)
No. centipedes	0.097	11.580	0.0011	-0.036 (0.010)
No. coleoptera	0.063	7.470	0.0079	-0.032 (0.012)
Pine trees present	0.406	48.389	< 0.001	0.080 (0.011)
Radiation	0.872	103.772	< 0.001	0.117 (0.011)

Ecosystem effects: (3) Sexually transmitted plant disease

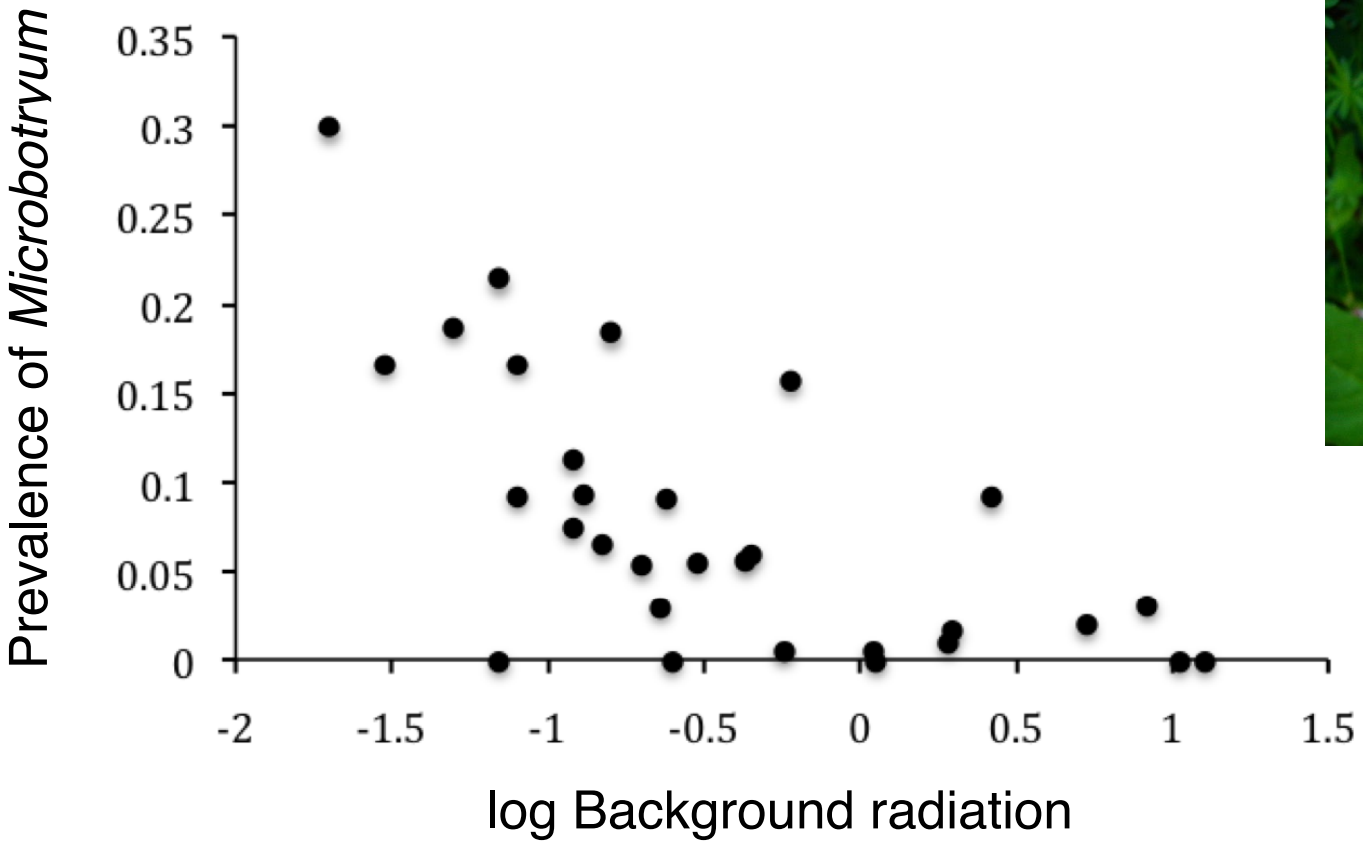
Abundance of butterflies and radiation

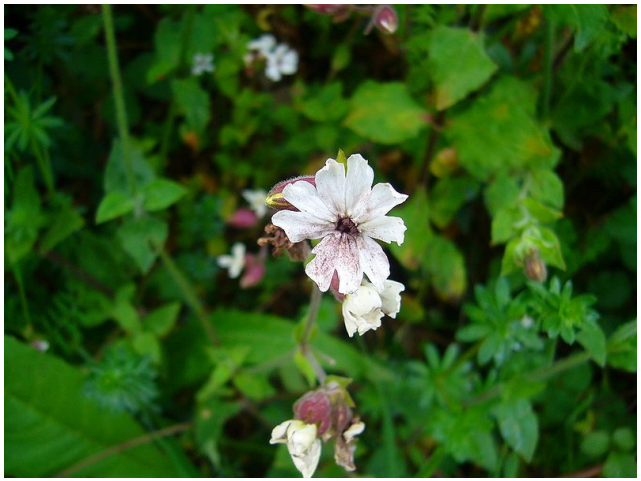


Prevalence of *Microbotryum* and abundance of butterflies



Prevalence of *Microbotryum* and radiation





Ecosystem effects:
(4) Insectivorous birds

No. insectivorous birds in relation to radiation and invertebrates

$\chi^2 = 25.62$, df = 5, $N = 731$, $P < 0.0001$

Term	df	χ^2	*P*	Estimate (SE)
Radiation	1	27.63	< 0.0001	-0.135 (0.027)
No. spider webs	1	4.88	0.028	0.246 (0.115)
No. butterflies	1	5.43	0.020	0.288 (0.122)
Radiation * No. butterflies	1	0.32	0.57	0.073 (0.129)
Radiation * No. spider webs	1	8.71	0.0032	-0.359 (0.126)

Ecosystem effects:
(5) Spider webs

No. spider webs in relation to radiation and insects

$\chi^2 = 758.32$, df = 3, $N = 731$, $P < 0.0001$

Term	df	χ^2	*P*	Estimate (SE)
Radiation	1	10.59	0.0011	-0.230 (0.074)
No. insects	1	547.56	< 0.0001	3.286 (0.150)
Radiation * No. insects	1	71.83	< 0.0001	1.213 (0.154)

Conclusions

- Ecosystem effects of radiation are common
- Direct and indirect effects of radiation
- Indirect effects can be as strong as direct effects
- Indirect effects include many species