APPENDIX B
POLLUTION-SENSITIVE LICHENS
(FROM LITERATURE REVIEW)

GENUS SPECIES	SENSITIVITY	SYMPTOM	REFERENCE
Alectoria sarmentosa	SO_2	increase photosyn rate; increase respiration rate	a, b, j
*Bryoria fuscescens	SO_2		j
Cladina rangifernia	SO_2, metals	K efflux, S, Pb uptake	b, c
Cladina stellaris	acid ppt, metals	decrease growth; Pb uptake	b
*Cladonia coniocraea	SO_2		j
*Cladonia fimbriata	SO_2		j
Cladonia impexa	SO_2, radiation	radiation uptake	b
*Collema polycarpon	SO_2	decreased photosynthesis; increased conductivity; F efflux	d
*Collema tenax	SO_2, metals	decreased N^2 fixation; Pb uptake	b
Evernia prunasti	SO_2	increased conductivity	b
Flavoparmelia Baltimorensis	S	S uptake	e
Hypogymnia Enteromorpha	PAN	decreased photosynthesis	f
Hypogymnia physodes	SO_2		b
*Lecanora muralis	SO_2	decreased photosynthesis, respiration; increased conductivity, K efflux	g, b
*Lecanora varia	SO_2		j
Lobaria sp.	SO_2, acid ppt	decreased N^2 fixation, photosynthesis; yellowing, plasmolysis	b h, g
Parmelia rudecta	metals	Cr uptake	b
Parmelia sulcata	O_3, PAN	decreased photosynthesis	f, b
*Peltigera canina	SO_2	very sensitive	j
*Physcia adscendens	SO_2		j
*Physcia aipolia	SO_2		j
*Physcia caesia	SO_2		j
Pseudoparmelia baltimorensis	metals	Pb uptake	b
Pseudoparmelia caperata	SO_2	decreased chlorophyll; Cr uptake	b
Ramalina sp.	radiation	radiation uptake	b
Sticta sp.	SO_2		b
Umbilicaria mammulata	acid ppt.	necrosis of thallus	a, b
Usnea fulvoreagens	acid ppt.	chlorophyll autofluorescence shift	i

GENUS SPECIES	SENSITIVITY	SYMPTOM	REFERENCE
Usnea hirta	SO_2	yellowing, plasmolysis, decreased respiration	h, j
*Usnea sp.	SO_2, acid ppt, radiation	bleaching, radiation uptake, very sensitive	a, b, j
*Xamthoparmelia conspersa	metals	Pb uptake	a, b
*Xanthoria candelaria	SO_2		j
*Xanthoria polycarpa	SO_2		j

a) Eversman, 1988
b) Lawrey, 1984
c) Zakshek, 1986
d) Galloway, 1987
e) Lawrey, 1988
f) Eversman, 1984
g) Fields, 1984
h) Eversman, 1978
i) Berglund, 1988
j) Geiser, 1994

* - species found on the White River National Forest