

Supplementary Material 1a. Historic records from Glen Canyon National Recreation Area and nearby regions from the Consortium of North American Lichen Herbaria (CNALH). Species are sorted by family, with species found in both historical records and in Fifty-Mile Canyon are shown in bold text; historic records from CNALH not found in Fifty-Mile Canyon are shown in red text. The occurrence of species indicated in non-bold, non-red text in Fifty-Mile Canyon and other locations in Glen Canyon NRA remain ambiguous due to potential differences in specimen identification – e.g., variation in taxonomic interpretations may result in different determinations. The search on CNALH was done on 26 February 2021, using the polygon search criterion:

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POLYGON((36.898518      -111.219949,36.894125      -111.502847,37.080605
-111.750040,37.181333    -111.739053,37.297222    -111.560525,37.299407
-111.027689,37.513218    -111.299600,37.567663    -111.409463,37.672088
-111.516580,37.758996    -111.307840,37.873992    -111.280374,37.941171
-111.038675,37.830618    -110.959024,37.639471    -110.871133,37.617718
-110.835428,37.650345    -110.755777,37.785048    -110.673379,37.981764
-110.590982,38.051008    -110.579996,38.016394    -110.472879,38.096413
-110.417947,37.968774    -110.291605,37.777984    -110.242166,37.575818
-110.360269,37.333802    -110.615701,37.364369    -109.951028,37.198281
-109.901590,37.134808    -109.978494,37.252956    -110.211954,37.101957
-110.906839,36.898518    -111.219949))
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– see associated .kml file (Supplementary Material 1b).

Lichens of Glen Canyon National Recreation Area on CNALH – taxon count: 124

ACAROSPORACEAE (12)

Acarospora arenacea

Acarospora fuscata

Acarospora fuscescens

Acarospora heufleriana

Acarospora rosulata

Acarospora schleircheri

Acarospora smaragdula

Acarospora strigata

Myriospora hassei

Polysporina simplex

Sarcogyne desolata

Sarcogyne hypophaea

CALICIACEAE (6)

Amandinea punctata

Buellia dispersa

Buellia erubescens

Buellia nashii

Diplotomma venustum

Pyxine subcinerea

CANDELARIACEAE (6)

Candelariella antennaria

Candelariella aurella

Candelariella deflexa
Candelariella rosulans
Candelariella terrigena
Candelariella vitellina

CATILLARIACEAE (1)
Thalloidima sedifolium

COLLEMATACEAE (6)
Collema crispum
Collema tenax
Collema tenax var. *corallinum*
Collema undulatum var. *granulosum*
Enchylium coccophorum
Leptogium sp.

LECANORACEAE (20)
Lecanora argopholis
Lecanora cenisia
Lecanora phaedrophthalma
Lecanora valesiaca
Lecidea plana
Lecidea tessellata
Lecidella carpathica
Lecidella patavina
Myriolecis dispersa
Myriolecis flotowiana
Myriolecis flowersiana
Myriolecis hagenii
Myriolecis semipallida
Protoparmeliopsis garovaglii
Protoparmeliopsis muralis
Rhizoplaca chrysoleuca
Rhizoplaca melanophthalma
Rhizoplaca peltata

LECIDEACEAE (1)
Porpidia macrocarpa

LICHENOTHELIACEAE (1)
Lichenothelia scopularia

LICHINACEAE (9)
Heppia adglutinata
Heppia conchiloba
Heppia lutosa
Lichinella nigritella
Lichinella stipatula
Peccania arizonica
Peccania fontqueriana
Peccania subnigra

Pyrenopsis phaeococca

MEGASPORACEAE (1)

Circinaria caesiocinerea

PARMELIACEAE (7)

Melanohalea subolivacea

Montanelia saximontana

Parmelia substygia

Xanthoparmelia conspersa

Xanthoparmelia lineola

Xanthoparmelia mexicana

Xanthoparmelia plittii

PELTULACEAE (1)

Peltula obscurans var. *deserticola*

PHYSICIACEAE (11)

Anaptychia elbursiana

Anaptychia ulotrichoides

Heterodermia speciosa

Physconia muscigena

Phaeophyscia hirsuta

Physcia biziana

Physcia caesia

Physcia dimidiata

Physcia phaea

Physciella chloantha

Rinodina straussii

PSORACEAE (3)

Psora decipiens

Psora globifera

Psora tuckermanii

RAMALINACEAE (2)

Toninia tristis

Toninia weberi

RHIZOCARPACEAE (1)

Rhizocarpon disporum

STEREOCAULACEAE (2)

Lepraria membranacea

Lepraria neglecta

TELOSCHISTACEAE (16)

Athallia holocarpa

Caloplaca cerina

Calogaya decipiens

Caloplaca adnexa

Caloplaca arenaria
Caloplaca atroabla
Caloplaca epithallina
Caloplaca fraudans
Caloplaca oblongula
Caloplaca pinicola
Caloplaca sideritis
Gyalolechia bracteata
Rusavskia elegans
Xanthomendoza fallax
Xanthomendoza montana
Xanthomendoza trachyphylla

TEPHROMELATACEAE (1)

Tephromela atra

THELOTREMATACEAE (3)

Diploschistes actinostomus
Diploschistes arabiensis
Diploschistes scruposus

UMBILICARIACEAE (1)

Umbilicaria sp.

VERRUCARIACEAE (14)

Catapyrenium lachneum
Catapyrenium squamellum
Dermatocarpon americanum
Dermatocarpon luridum
Dermatocarpon miniatum
Dermatocarpon miniatum var. complicatum
Heteroplacidium compactum
Heteroplacidium congestum
Placidium acarosporoides
Staurothele areolata
Staurothele drummondii
Staurothele monicae
Verrucaria compacta
Verrucaria furfuracea

XYLOGRAPHACEAE (1)

Xylographa sp.