



# Mount Arrowsmith Biosphere Region BioBlitz

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## 2022 Summary Report



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*We would also like to thank our partners, including the Nature Trust of BC, and the Brant Wildlife Festival, with which we have held this event in collaboration and partnership since 2016.*

*Last but not least, we would like to thank all those who participated in this year's BioBlitz and took time to record observations. Without you, this report would not have been possible. We greatly appreciate your help.*

## ⋮ The Mount Arrowsmith Biosphere Region

The Mount Arrowsmith Biosphere Region (MABR) is a UNESCO designated Biosphere Reserve located on mid-eastern Vancouver Island. Biosphere Reserves are considered model regions where people live and work together in hopes of creating a sustainable future to thrive in harmony with nature. The MABR is situated within the traditional territories of seven First Nations communities and shares similar boundaries with the Regional District of Nanaimo. The vertical elevation spans just over 2,100 meters from the highest peak on Mt. Arrowsmith (1,817 meters) to 300 meters into the Salish Sea. This vertical range makes the MABR unique among Canadian Biospheres, containing many distinctive ecosystems ranging from high alpine and coastal forests to intertidal and marine habitats. Additionally, as the MABR spans a geographic area of 1,200 square kilometers, the region encompasses an ecologically diverse range of habitats and ecosystems within its watershed boundaries. These ecosystems hold cultural, environmental, and economical significance.

Further elevating local relationships between people and nature, is the Mount Arrowsmith Biosphere Region Research Institute (MABRRI). MABRRI strives to embrace and celebrate the diverse values of the MABR through research, education, and community outreach, promoting environmental conservation and awareness of this beautiful and extraordinary place by which we all live and share.

## ⋮ Introduction to a BioBlitz

A BioBlitz is a rapid biological survey of flora and fauna that embraces citizen science, connecting local community members, knowledge holders, naturalists, and scientists to identify as many species as possible within an allocated time frame. The data collected from these biological surveys is important for gaining sound baseline knowledge of existing biodiversity in the region. Annual biological monitoring allows researchers to monitor trends and changes over time that can indicate fluctuations in species at risk, invasive species, and overall species richness of a region. For instance, changes in habitat health from long-term climate trends and local weather patterns can significantly alter the state of the environment and can be detected over time with community monitoring initiatives. The main benefit of conducting a BioBlitz is that the data collected by participants provides a snapshot of biodiversity and species richness within the region. BioBlitz events also foster increased regional knowledge of changes to biodiversity over time, such as species abundance, habitat for species at risk, as well as invasive species distribution. The data collected during the annual event can help inform the management of sensitive habitats and ecosystems within the region.

## ⋮ MABR BioBlitz Events

The goal of the annual BioBlitz is to promote citizen science-based research while celebrating wildlife and biodiversity within the MABR. The data collected during this annual event helps inform the management of sensitive habitats and ecosystems within the region. BioBlitz events have been held by MABRRI within the MABR since 2016. The event supports the values of a UNESCO designated Biosphere Reserve as it is designed to connect people with nature through species identification and knowledge building. These events provide an engaging opportunity for community members to connect with local experts and peers while learning about their surrounding environment. The event has successfully worked toward increasing participants' knowledge of biodiversity while equipping individuals with basic stewardship field skills.

The MABR BioBlitz has the capability to expand local knowledge of biodiversity and wildlife habitat within the region, and contributes to a publicly available and transparent data set. This data set holds value and use for future generations and long-term species trend analysis. This research aims to promote the health and resilience of our natural systems, including the intricate and unique characteristics and relationships within these ecosystems. We wish to promote knowledge sharing, environmental stewardship, and critical thinking in communities beyond the academic environment to promote the longevity and relationships between people and nature. The aim of future BioBlitz events is to include a greater variety of ecosystems, habitats, and microclimates within the MABR year after year. This will provide an opportunity to observe and monitor trends in species inventory. Additionally, the MABR BioBlitz strives to increase citizen-science based participation each year.



## ∴ The 2022 Biosphere-Wide Blitz

The 2022 MABR BioBlitz was the sixth annual event held in conjunction with the Brant Wildlife festival. Prior to 2021, the annual BioBlitz had been held at the Milner Gardens and Woodland site in Qualicum Beach. However, due to the COVID-19 pandemic, the event was extended to the boundaries of the MABR, ranging from Nanoose Bay to Qualicum Bay, to allow for social distancing and to collect a broader view of the biodiversity within the region.

This year's BioBlitz event encouraged MABR community members to identify as many species as possible within the MABR boundaries, which provided a snapshot of species richness in different locations throughout the region. The 2022 Biosphere-wide Blitz took place from April 8 through 10 and employed the iNaturalist mobile application (iNaturalist app) to record observations of flora and fauna. The data collected from the BioBlitz was compiled into a database (Table 1 and Table 2), and is useful in providing a snapshot of overall biodiversity within the MABR. The results of the participant data collected during the 2022 BioBlitz revealed 1,107 observations, including 401 distinct species.

### Goals and Objectives

While the primary goal of the MABR's annual BioBlitz is to provide a snapshot of regional species richness, it is also a main focus of motivating a larger group of community participants to take part in the event year after year. By increasing engagement in the event, community members have opportunities to enhance their research skills, connect with their surrounding environment, learn about regional biodiversity, all while being part of a regional community initiative.

The objectives of the 2022 MABR BioBlitz are as follows:

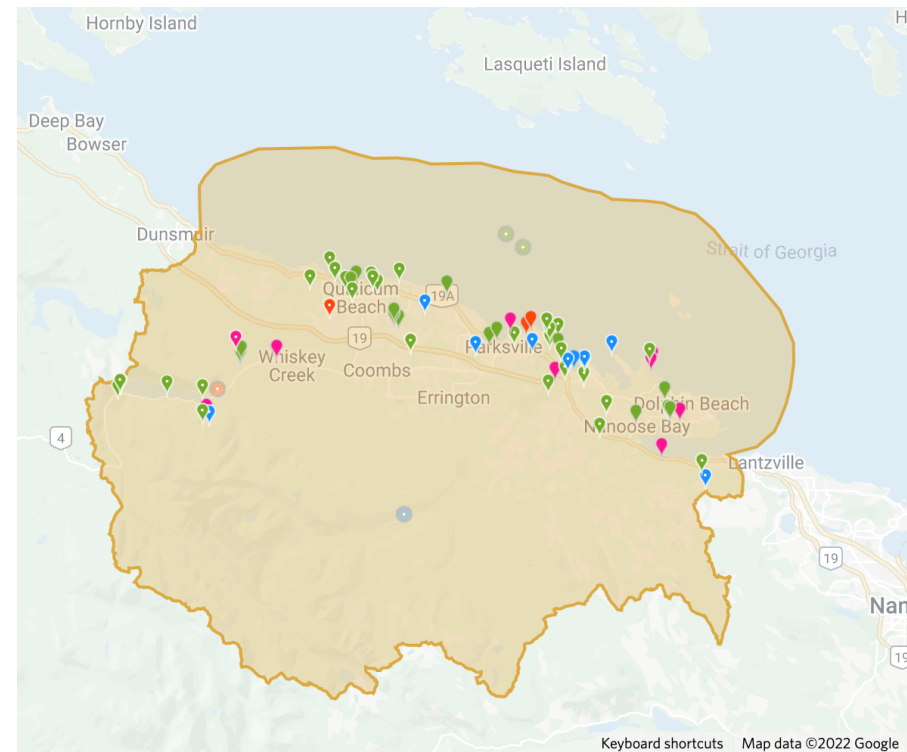
1. To gain a broader view of biodiversity within our region;
2. Contribute to long-term monitoring of flora and fauna in the MABR;
3. Promote citizen science-based research while celebrating wildlife and biodiversity within the MABR;
4. Promote the health and resilience of our natural systems; and
5. Provide participants and the public with a finalized flora and fauna collection report, including species identified during the event.

## Methods

The event took place over three days (April 8, 9, and 10, 2022) within the MABR's boundaries, ranging from Nanoose Bay to Qualicum Bay. Over the three days, participants recorded observations in their own time using the iNaturalist app. Observations were recorded through photos uploaded to the iNaturalist app, which were then identified by citizen scientists and volunteers using supporting identification materials, such as nature guides. Prizes were awarded to those who recorded the highest number of observations on each of the three days.

## Data Collection from the 2022 MABR BioBlitz

The data collected in 2022 provides information on the biodiversity across the Biosphere Region (Image 1). Participant observations from across the MABR are compiled into Tables 1 and 2 below. Table 1 includes a complete list of the flora recorded and identified from April 8 to April 10, and Table 2 includes a complete list of fauna recorded and identified from April 8 to 10. Note that invasive species are highlighted in **RED**, exotic species are highlighted in **GREEN**, and species at risk in BC are highlighted in **BLUE**.



**Figure 1. Map of Observations Collected April 8, 9, and 10, 2022.**





Bitter Cherry - image by: jey42



Gary (Oregon) Oak - image by: sharilemieux

**Table 1. Compiled Findings from April 8, 9, and 10, 2022 MABR BioBlitz Flora Species.**

| Trees             |                                |                        |
|-------------------|--------------------------------|------------------------|
| Common Name       | Scientific Name                | Number of Observations |
| Arbutus           | <i>Arbutus menziesii</i>       | 12                     |
| Bigleaf maple     | <i>Acer macrophyllum</i>       | 11                     |
| Bitter Cherry     | <i>Prunus emarginata</i>       | 7                      |
| Douglas fir       | <i>Pseudotsuga menziesii</i>   | 27                     |
| Common Juniper    | <i>Juniperus communis</i>      | 4                      |
| Black Cottonwood  | <i>Populus trichocarpa</i>     | 1                      |
| English Holly     | <i>Ilex aquifolium</i>         | 6                      |
| False Cypress     | <i>Chamaecyparis</i>           | 1                      |
| Field Elm         | <i>Ulmus minor</i>             | 1                      |
| Firethorn         | <i>Pyracantha coccinea</i>     | 1                      |
| Garry oak         | <i>Quercus garryana</i>        | 1                      |
| Grand Fir         | <i>Abies grandis</i>           | 7                      |
| Green Alder       | <i>Alnus viridis</i>           | 3                      |
| Lodgepole Pine    | <i>Pinus contorta</i>          | 4                      |
| Pacific Crabapple | <i>Malus fusca</i>             | 1                      |
| Pacific Yew       | <i>Taxus brevifolia</i>        | 1                      |
| Paper Birch       | <i>Betula papyrifera</i>       | 3                      |
| Poplar tree       | <i>Populus</i>                 | 1                      |
| Red Alder         | <i>Alnus rubra</i>             | 11                     |
| Red Elderberry    | <i>Sambucus racemosa</i>       | 7                      |
| River Birch       | <i>Betula nigra</i>            | 1                      |
| Scoulers Willow   | <i>Salix scouleriana</i>       | 1                      |
| Service Tree      | <i>Sorbus domestica</i>        | 1                      |
| Shore Pine        | <i>Pinus contorta contorta</i> | 2                      |
| Silver birch      | <i>Betula pendula</i>          | 2                      |



Western White Pine - image by: accipiter56



Cascade Oregon-Grape - image by: jey42



Common Snowberry - image by: jey42

|                                |                                  |            |
|--------------------------------|----------------------------------|------------|
| Sitka spruce                   | <i>Picea sitchensis</i>          | 2          |
| Western Hemlock                | <i>Tsuga heterophylla</i>        | 8          |
| Western Red Cedar              | <i>Thuja plicata</i>             | 18         |
| Western White Pine             | <i>Pinus monticola</i>           | 3          |
| White Poplar                   | <i>Populus alba</i>              | 1          |
| Willows                        | <i>Salix</i>                     | 2          |
| Yellow Cedar                   | <i>Callitropsis nootkatensis</i> | 1          |
| <b>Total Number of Species</b> | <b>30</b>                        |            |
| <b>Total Observations</b>      |                                  | <b>159</b> |

### Shrubs

| Common Name           | Scientific Name                | Number of Observations |
|-----------------------|--------------------------------|------------------------|
| American yellowrocket | <i>Barbarea orthoceras</i>     | 3                      |
| Baldhip Rose          | <i>Rosa gymnocarpa</i>         | 5                      |
| Barberries            | <i>Berberis</i>                | 1                      |
| Bearberry             | <i>Arctostaphylos uva-ursi</i> | 2                      |
| Black raspberry       | <i>Rubus leucodermis</i>       | 1                      |
| Blueberry elder       | <i>Sambucus nigra</i>          | 1                      |
| Border Forsythia      | <i>Forsythia intermedia</i>    | 2                      |
| Canary Island Ivy     | <i>Hedera canariensis</i>      | 1                      |
| Cascade Oregon Grape  | <i>Berberis nervosa</i>        | 16                     |
| Common Honeysuckle    | <i>Lonicera periclymenum</i>   | 6                      |
| Common juniper        | <i>Juniperus communis</i>      | 1                      |
| Common Serviceberry   | <i>Amelanchier arborea</i>     | 2                      |
| Common Snowberry      | <i>Symphoricarpos albus</i>    | 10                     |
| Creeping snowberry    | <i>Symphoricarpos mollis</i>   | 1                      |
| Dull Oregon Grape     | <i>Berberis nervosa</i>        | 1                      |
| European Gooseberry   | <i>Ribes uva-crispa</i>        | 1                      |
| Cutleaf Blackberry    | <i>Rubus laciniatus</i>        | 1                      |



Red Huckleberry - image by: jey42



Oregon Boxwood - image by: asjviv



Salmonberry - image by: sharilemieux

|                           |                                |    |
|---------------------------|--------------------------------|----|
| Devils Club               | <i>Oplopanax horridus</i>      | 1  |
| English Ivy               | <i>Hedera helix</i>            | 5  |
| European Black Elderberry | <i>Sambucus nigra</i>          | 1  |
| European Gooseberry       | <i>Ribes uva-crispa</i>        | 2  |
| Firethorn                 | <i>Pyracantha coccinea</i>     | 1  |
| Himalayan Blackberry      | <i>Rubus bifrons</i>           | 8  |
| Honeysuckles              | <i>Lonicera</i>                | 5  |
| Spurge-laurel             | <i>Daphne laureola</i>         | 1  |
| Nootka Rose               | <i>Rosa nutkana</i>            | 8  |
| Ocean Spray               | <i>Holodiscus discolor</i>     | 12 |
| Orange Honeysuckle        | <i>Lonicera ciliosa</i>        | 4  |
| Oregon Boxwood            | <i>Paxistima myrsinites</i>    | 5  |
| Oregon grape              | <i>Berberis aquifolium</i>     | 12 |
| Pacific Glasswort         | <i>Salicornia pacifica</i>     | 1  |
| Pacific ninebark          | <i>Physocarpus capitatus</i>   | 3  |
| Pink Honeysuckle          | <i>Lonicera hispidula</i>      | 1  |
| Red Huckleberry           | <i>Vaccinium parvifolium</i>   | 11 |
| Red Osier Dogwood         | <i>Cornus sericea</i>          | 1  |
| Red-flowering Currant     | <i>Ribes sanguineum</i>        | 14 |
| Rose Spirea               | <i>Spiraea douglasii</i>       | 4  |
| Gunrei Satzuki Azalea     | <i>Rhododendron x hybridum</i> | 1  |
| Salal                     | <i>Gaultheria Shallon</i>      | 15 |
| Salmonberry               | <i>Rubus spectabilis</i>       | 10 |
| Saskatoon Berries         | <i>Amelanchier alnifolia</i>   | 1  |
| Scotch Broom              | <i>Cytisus scoparius</i>       | 4  |
| Snowberries               | <i>Symphoricarpos</i>          | 3  |
| Spindles                  | <i>Euonymus</i>                | 1  |
| Spreading Gooseberry      | <i>Ribes divaricatum</i>       | 4  |
| Spurge-laurel             | <i>Daphne laureola</i>         | 2  |



Canada thistle - image by: jey42



Catchweed bedstraw - image by: stevenhayward



Common Daisy - image by: jey42

|                                |                          |            |
|--------------------------------|--------------------------|------------|
| Thimbleberry                   | <i>Rubus parviflorus</i> | 6          |
| Trailing blackberry            | <i>Rubus ursinus</i>     | 8          |
| Whitebark raspberry            | <i>Rubus leucodermis</i> | 1          |
| <b>Total Number of Species</b> | <b>52</b>                |            |
| <b>Total Observations</b>      |                          | <b>219</b> |

### Herbs and Wildflowers

| Common Name           | Scientific Name              | Number of Observations |
|-----------------------|------------------------------|------------------------|
| Alaska plantain       | <i>Plantago macrocarpa</i>   | 1                      |
| American trailplant   | <i>Adenocaulon bicolor</i>   | 1                      |
| American yellowrocket | <i>Barbarea orthoceras</i>   | 3                      |
| Arctic Butterbur      | <i>Petasites frigidus</i>    | 2                      |
| Asterioideae          | Asterioideae                 | 1                      |
| Bittercresses         | <i>Cardamine oligosperma</i> | 2                      |
| Blue-eyed Marys       | <i>Collinsia</i>             | 1                      |
| Boreal Starwort       | <i>Stellaria borealis</i>    | 1                      |
| Bull Thistle          | <i>Cirsium vulgare</i>       | 1                      |
| Bur Parsley           | <i>Anthriscus caucalis</i>   | 7                      |
| Canada thistle        | <i>Cirsium arvense</i>       | 4                      |
| Candy Flower          | <i>Claytonia sibirica</i>    | 1                      |
| Catchweed bedstraw    | <i>Galium aparine</i>        | 7                      |
| Checker lily          | <i>Fritillaria affinis</i>   | 2                      |
| Coastal Hedegnettle   | <i>Stachys chamissonis</i>   | 2                      |
| Common Cat's-ear      | <i>Hypochaeris radicata</i>  | 3                      |
| Common chickweed      | <i>Stellaria media</i>       | 3                      |
| Common Daisy          | <i>Bellis perennis</i>       | 5                      |
| Common dandelion      | <i>Taraxacum officinale</i>  | 8                      |
| Common duckweed       | <i>Lemna minor</i>           | 1                      |
| Common groundsel      | <i>Senecio vulgaris</i>      | 1                      |



Giant Blue-eyed Mary - image by: jey42



Giant white fawn lily - image by: jey42



Miner's lettuce - image by: court\_v

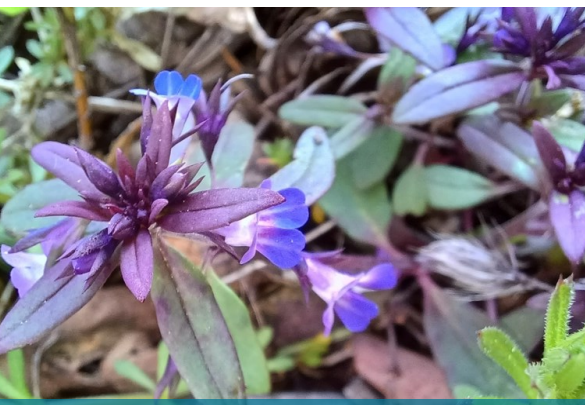
|                          |                                   |    |
|--------------------------|-----------------------------------|----|
| Common grape hyacinth    | <i>Muscari botryoides</i>         | 1  |
| Common Vetch             | <i>Vicia sativa</i>               | 2  |
| Common Yarrow            | <i>Achillea millefolium</i>       | 2  |
| Crevice alumroot         | <i>Heuchera micrantha</i>         | 2  |
| Docks                    | <i>Rumex</i>                      | 1  |
| Dove's-foot crane's-bill | <i>Geranium molle</i>             | 3  |
| English plantain         | <i>Plantago lanceolata</i>        | 4  |
| European stinging nettle | <i>Urtica dioica</i>              | 6  |
| Flowering Plants         | <i>angiosperma - unidentified</i> | 2  |
| Foothill desert-parsley  | <i>Lomatium utriculatum</i>       | 2  |
| Forget-me-nots           | <i>Myosotis</i>                   | 1  |
| Giant Blue-eyed Mary     | <i>Collinsia grandiflora</i>      | 3  |
| Giant Butterbur          | <i>Petasites japonicus</i>        | 1  |
| Giant Hogweed            | <i>Heracleum mantegazzianum</i>   | 2  |
| Giant white fawn lily    | <i>Erythronium oregonum</i>       | 6  |
| Hairy bittercress        | <i>Cardamine hirsuta</i>          | 3  |
| Heath Groundsel          | <i>Senecio sylvaticus</i>         | 1  |
| Hedgenettles             | <i>Stachys</i>                    | 1  |
| Herb Robert              | <i>Geranium robertianum</i>       | 2  |
| Large-leaved Avens       | <i>Geum macrophyllum</i>          | 2  |
| Largeleaf Sandwort       | <i>Moehringia macrophylla</i>     | 1  |
| Vetchlings               | <i>Lathyrus latifolius</i>        | 1  |
| Lesser periwinkle        | <i>Vinca minor</i>                | 2  |
| Lupines                  | <i>Lupinus</i>                    | 1  |
| Marsh cudweed            | <i>Gnaphalium uliginosum</i>      | 1  |
| Marsh marigold           | <i>Caltha palustris</i>           | 1  |
| Miner's lettuce          | <i>Claytonia perfoliata</i>       | 13 |
| Mountain sweet cicely    | <i>Osmorhiza berteroi</i>         | 3  |



Pacific Bleeding Heart - image by: guylmonty



Redstem Stork's-bill - image by: jey42

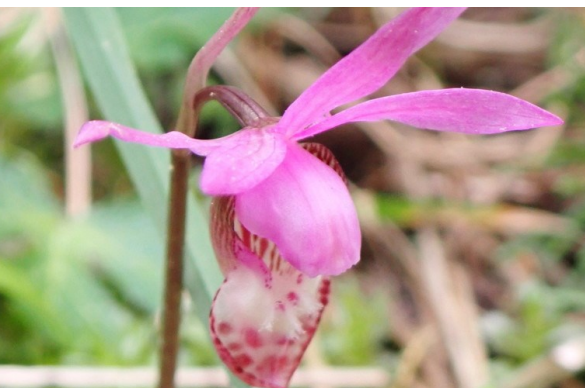


Small-flowered Blue-eyed Mary - image by: sharilemieux

|                               |                                 |    |
|-------------------------------|---------------------------------|----|
| Mouse-ear Chickweed           | <i>Cerastium fontanum</i>       | 1  |
| Nipplewort                    | <i>Lapsana communis</i>         | 4  |
| Nuttall's toothwort           | <i>Cardamine nuttallii</i>      | 2  |
| Orchid                        | <i>Platanthera</i>              | 1  |
| Oregon Gumplant               | <i>Grindelia stricta</i>        | 4  |
| Pacific Bleeding Heart        | <i>Dicentra formosa</i>         | 5  |
| Pacific Sanicle               | <i>Sanicula crassicaulis</i>    | 6  |
| Pacific silverweed            | <i>Argentina pacifica</i>       | 2  |
| Pacific trillium              | <i>Trillium ovatum</i>          | 13 |
| Pearly everlasting            | <i>Anaphalis margaritacea</i>   | 1  |
| Pipsissewa                    | <i>Chimaphila umbellata</i>     | 2  |
| Puget Sound Gumweed           | <i>Grindelia integrifolia</i>   | 1  |
| Purple foxglove               | <i>Digitalis purpurea</i>       | 2  |
| Ramsons                       | <i>Allium ursinum</i>           | 1  |
| Rattlesnake Plantain          | <i>Goodyera oblongifolia</i>    | 2  |
| Red deadnettle                | <i>Lamium purpureum</i>         | 8  |
| Red flowering currant         | <i>Ribes sanguineum</i>         | 13 |
| Red-seeded dandelion          | <i>Taraxacum erythrospermum</i> | 2  |
| Redstem Springbeauty          | <i>Claytonia rubra</i>          | 2  |
| Redstem Stork's-bill          | <i>Erodium cicutarium</i>       | 2  |
| Redwood Violet                | <i>Viola sempervirens</i>       | 3  |
| Ribwort plantain              | <i>Plantago lanceolata</i>      | 1  |
| Rustyhair Saxifrage           | <i>Micranthes rufidula</i>      | 1  |
| Roses                         | <i>Rosa</i>                     | 2  |
| Shepherd's Cress              | <i>Teesdalia nudicaulis</i>     | 4  |
| Shortspur seablush            | <i>Plectritis congesta</i>      | 1  |
| Sierra Nevada Peavine         | <i>Lathyrus nevadensis</i>      | 2  |
| Small-flowered blue-eyed mary | <i>Collinsia parviflora</i>     | 2  |



Smallflower woodland star - image by: jey42



Western Fairy-slipper - image by: jey42



Western Lily of the Valley - image by: maureenlaf

|                            |                                     |    |
|----------------------------|-------------------------------------|----|
| Smallflower woodland star  | <i>Lithophragma parviflorum</i>     | 1  |
| Soft Rush                  | <i>Juncus effusus</i>               | 1  |
| Stream violet              | <i>Viola glabella</i>               | 1  |
| Streambank Springbeauty    | <i>Claytonia parviflora</i>         | 1  |
| Tansy                      | <i>Tanacetum vulgare</i>            | 3  |
| Threelobed goldthread      | <i>Coptis trifolia</i>              | 2  |
| Twinflower                 | <i>Linnaea borealis</i>             | 2  |
| vanilla leaf               | <i>Achlys triphylla</i>             | 8  |
| Vetches                    | <i>Vicia</i>                        | 1  |
| Virginia Glasswort         | <i>Salicornia depressa</i>          | 1  |
| Wall Lettuce               | <i>Mycelis muralis</i>              | 6  |
| Water Fringe               | <i>Nymphoides peltata</i>           | 1  |
| Water parsley              | <i>Oenanthe sarmentosa</i>          | 1  |
| Watercress                 | <i>Angiospermae</i>                 | 1  |
| Wavy bittercress           | <i>Cardamine flexuosa</i>           | 2  |
| Western Buttercup          | <i>Ranunculus occidentalis</i>      | 2  |
| Western Fairy-slipper      | <i>Calypso bulbosa occidentalis</i> | 2  |
| Western Lily of the Valley | <i>Maianthemum dilatatum</i>        | 2  |
| Western skunk cabbage      | <i>Lysichiton americanus</i>        | 10 |
| Western Star Flower        | <i>Lysimachia latifolia</i>         | 5  |
| Western Sweet Coltsfoot    | <i>Petasites frigidus palmatus</i>  | 1  |
| White clover               | <i>Trifolium repens</i>             | 3  |
| White hawkweed             | <i>Hieracium albiflorum</i>         | 1  |
| White twisted-stalk        | <i>Streptopus amplexifolius</i>     | 1  |
| Wholeleaf Saxifrage        | <i>Micranthes integrifolia</i>      | 2  |
| Wild carrot                | <i>Daucus carota</i>                | 2  |
| Wild chervil               | <i>Anthriscus sylvestris</i>        | 1  |
| Wild daffodil              | <i>Narcissus pseudonarcissus</i>    | 1  |



Wood Dock - image by: allie\_alpe



Lady fern - image by: sharilemieux



Great horsetail - image by: accipiter56

|                                |                               |            |
|--------------------------------|-------------------------------|------------|
| Wingstem monkeyflower          | <i>Erythranthe alsinoides</i> | 1          |
| Wood Dock                      | <i>Rumex sanguineus</i>       | 1          |
| Wood sweet cicely              | <i>Osmorhiza berteroi</i>     | 1          |
| Yellow Iris                    | <i>Iris pseudacorus</i>       | 1          |
| <b>Total Number of Species</b> | <b>110</b>                    |            |
| <b>Total Observations</b>      |                               | <b>285</b> |

### Ferns

| Common Name                    | Scientific Name                           | Number of Observations |
|--------------------------------|---|------------------------|
| Common Bracken                 | <i>Pteridium aquilinum</i>                | 6                      |
| Deer fern                      | <i>Struthiopteris spicant</i>             | 1                      |
| Hairy Brackenfern              | <i>Pteridium aquilinum var. pubescens</i> | 1                      |
| Lady fern                      | <i>Athyrium filix-femina</i>              | 1                      |
| Licorice fern                  | <i>Polypodium glycyrrhiza</i>             | 7                      |
| Western lady fern              | <i>Athyrium filix-femina cyclosorum</i>   | 2                      |
| Western sword fern             | <i>Polystichum munitum</i>                | 12                     |
| <b>Total Number of Species</b> | <b>7</b>                                  |                        |
| <b>Total Observations</b>      |   | <b>30</b>              |

### Sedges

| Common Name                    | Scientific Name                    | Number of Observations |
|--------------------------------|------------------------------------|------------------------|
| Braun's Giant Horsetail        | <i>Equisetum telmateia braunii</i> | 3                      |
| Broad Leaf Cattail             | <i>Typha latifolia</i>             | 2                      |
| Great horsetail                | <i>Equisetum telmateia</i>         | 4                      |
| Hybrid cattail                 | <i>Typha x glauca</i>              | 1                      |
| Slough sedge                   | <i>Carex obnupta</i>               | 1                      |
| Chamisso Sedge                 | <i>Carex pachystachya</i>          | 1                      |
| <b>Total Number of Species</b> | <b>6</b>                           |                        |
| <b>Total Observations</b>      |                                    | <b>12</b>              |





American dune grass - image by: stevenhayward



Cat's Tail Moss - image by: stevenhayward



Fan moss - image by: jey42

| Grasses                        |                                     |                        |
|--------------------------------|-------------------------------------|------------------------|
| Common Name                    | Scientific Name                     | Number of Observations |
| American dune grass            | <i>Leymus mollis</i>                | 3                      |
| Annual Meadow-grass            | <i>Poa annua</i>                    | 1                      |
| Bulbous Bluegrass              | <i>Poa bulbosa</i>                  | 2                      |
| Lyme grass                     | <i>Leymus arenarius</i>             | 1                      |
| Common Whitlowgrass            | <i>Draba verna</i>                  | 2                      |
| Reed Canary Grass              | <i>Phalaris arundinacea</i>         | 2                      |
| Veldt Grass                    | <i>Oryzoideae</i>                   | 1                      |
| Saltgrass                      | <i>Distichlis spicata</i>           | 1                      |
| Surfgrasses                    | <i>Phyllospadix</i>                 | 1                      |
| <b>Total Number of Species</b> | <b>9</b>                            |                        |
| <b>Total Observations</b>      |                                     | <b>14</b>              |
| Mosses                         |                                     |                        |
| Common Name                    | Scientific Name                     | Number of Observations |
| Badge Moss                     | <i>Plagiomnium insignne</i>         | 5                      |
| Boulder broom moss             | <i>Dicranum fulvum</i>              | 4                      |
| Bud-headed Groove-moss         | <i>Aulacomnium androgynum</i>       | 1                      |
| Cat's Tail Moss                | <i>Pseudisothecium stoloniferum</i> | 4                      |
| Coiled-leaf claw-moss          | <i>Hypnum circinale</i>             | 1                      |
| Common Feather-moss            | <i>Kindbergia praelonga</i>         | 2                      |
| Common Pin-cushion             | <i>Dicranoweisia cirrata</i>        | 3                      |
| Douglas' Neckera Moss          | <i>Neckera douglasii</i>            | 2                      |
| Dusky Fork Moss                | <i>Dicranium fuscescens</i>         | 1                      |
| Elongate Rock Moss             | <i>Racomitrium elongatum</i>        | 2                      |
| Fan moss                       | <i>Rhizomnium glabrescens</i>       | 2                      |
| Fragile Fork Moss              | <i>Dicranum fuscescens</i>          | 3                      |
| Hoary Fringe-moss              | <i>Racomitrium canescens</i>        | 1                      |
| Juniper haircap moss           | <i>Polytrichum juniperinum</i>      | 2                      |



Oregon Beaked Moss - image by: court\_v



Blue-gray Rosette Lichen - image by: jey42



Farinose Cartilage Lichen - image by: jey42

|                                |                                   |                               |
|--------------------------------|-----------------------------------|-------------------------------|
| Lyell's Bristle-moss           | <i>Pulviger a lyellii</i>         | 5                             |
| Menzies' Tree Moss             | <i>Leucolepis acanthoneura</i>    | 7                             |
| Obtuseleaf Scleropodium Moss   | <i>Scleropodium obtusifolium</i>  | 2                             |
| Oregon Beaked Moss             | <i>Kindbergia oregana</i>         | 11                            |
| Rough goose neck moss          | <i>Rhytidiadelphus triquetrus</i> | 7                             |
| Shingle moss                   | <i>Neckera pennata</i>            | 1                             |
| Stairstep moss                 | <i>Hylocomium splendens</i>       | 11                            |
| Twisted Moss                   | <i>Tortella tortuosa</i>          | 1                             |
| Waved Silk-moss                | <i>Plagiothecium undulatum</i>    | 3                             |
| Woodsy Thyme-moss              | <i>Plagiomnium cuspidatum</i>     | 1                             |
| <b>Total Number of Species</b> | <b>24</b>                         |                               |
| <b>Total Observations</b>      |                                   | <b>83</b>                     |
| <b>Lichens</b>                 |                                   |                               |
| <b>Common Name</b>             | <b>Scientific Name</b>            | <b>Number of Observations</b> |
| Beard lichens                  | <i>Usnea</i>                      | 1                             |
| Blue-gray Rosette Lichen       | <i>Physcia caesia</i>             | 2                             |
| Bottlebrush Shield Lichen      | <i>Parmelia squarrosa</i>         | 1                             |
| Bristly Beard Lichen           | <i>Usnea hirta</i>                | 4                             |
| Candleflame Lichen             | <i>Candelaria concolor</i>        | 1                             |
| Candy Lichen                   | <i>Icmadophila ericetorum</i>     | 1                             |
| Common Sunburst Lichen         | <i>Xanthoria parietina</i>        | 1                             |
| Coral Lichens                  | <i>Sphaerophorus tuckermanii</i>  | 1                             |
| Crater Lichen                  | <i>Diploschistes scruposus</i>    | 1                             |
| Farinose Cartilage Lichen      | <i>Ramalina farinacea</i>         | 4                             |
| Fishbone Beard Lichen          | <i>Usnea dasopoga</i>             | 1                             |
| Fluffy Dust Lichen             | <i>Lepraria finkii</i>            | 5                             |
| Freckled Pelt Lichen           | <i>Peltigera aphthosa</i>         | 1                             |
| Fringed Rosette Lichen         | <i>Physcia tenella</i>            | 1                             |
| Green-pea mushroom lichen      | <i>Lichenomphalia</i>             | 1                             |



Hooded Tube Lichen - image by: jey42



Lettuce Lichen - image by: jey42



Tuckerman's Coral Lichen - image by: court\_v

|                                |                                   |                               |
|--------------------------------|-----------------------------------|-------------------------------|
| Grey reindeer lichen           | <i>Cladonia rangiferina</i>       | 1                             |
| Herre's Ragged Lichen          | <i>Platismatia herrei</i>         | 1                             |
| Hoary Rosette Lichen           | <i>Physcia aipolia</i>            | 1                             |
| Hooded Rosette Lichen          | <i>Physcia adscendens</i>         | 1                             |
| Hooded Tube Lichen             | <i>Hypogymnia physodes</i>        | 3                             |
| Kidney Lichens                 | <i>Nephroma</i>                   | 1                             |
| Lettuce Lichen                 | <i>Lobaria oregana</i>            | 4                             |
| Lichen Agaric                  | <i>Lichenomphalia umbellifera</i> | 3                             |
| Mealy Pixie Cup                | <i>Cladonia chlorophaea</i>       | 1                             |
| Membranous Pelt Lichen         | <i>Peltigera membranacea</i>      | 2                             |
| Methuselah's Beard Lichen      | <i>Usnea longissima</i>           | 3                             |
| Oakmoss                        | <i>Evernia prunastri</i>          | 6                             |
| Pebbled Pixie Cup              | <i>Cladonia pyxidata</i>          | 1                             |
| Pin-Cushion sunburst lichen    | <i>Polycauliona polycarpa</i>     | 2                             |
| Pixie-cup Lichens              | <i>Cladonia</i>                   | 5                             |
| Powder-headed Tube Lichen      | <i>Hypogymnia tubulosa</i>        | 3                             |
| Punctured Bushy Lichen         | <i>Ramalina dilacerata</i>        | 3                             |
| Rim Lichens                    | <i>Lecanora</i>                   | 1                             |
| Shield lichen                  | <i>Parmelia sulcata</i>           | 2                             |
| Shrubby Sunburst Lichen        | <i>Polycauliona candelaria</i>    | 1                             |
| Tuckerman's Coral Lichen       | <i>Sphaerophorus tuckermanii</i>  | 3                             |
| Variable wrinkle lichen        | <i>Tuckermanopsis orbata</i>      | 1                             |
| Varied Rag Lichen              | <i>Platismatia glauca</i>         | 1                             |
| Witch's Hair                   | <i>Alectoria sarmentosa</i>       | 3                             |
| <b>Total Number of Species</b> | <b>39</b>                         |                               |
| <b>Total Observations</b>      |                                   | <b>77</b>                     |
| <b>Fungi</b>                   |                                   |                               |
| <b>Common Name</b>             | <b>Scientific Name</b>            | <b>Number of Observations</b> |
| Alpine jelly cone              | <i>Guepiniopsis alpina</i>        | 1                             |



Chocolate Cone Cup - image by: stevenahayward



Common bonnet - image by: jey42



Jellied bird's nest fungus - image by: court\_v

|                               |                                    |   |
|-------------------------------|------------------------------------|---|
| Artist's bracket              | <i>Ganoderma applanatum</i>        | 2 |
| Bell-shaped nolanea           | <i>Nolanea mammosa</i>             | 1 |
| Birch Polypore                | <i>Fomitopsis betulina</i>         | 1 |
| Chocolate Cone Cup            | <i>Ciboria rufofusca</i>           | 2 |
| Common bonnet                 | <i>Mycena galericulata</i>         | 3 |
| Common Goldspeck              | <i>Candelariella vitellina</i>     | 3 |
| Common Milkcaps               | <i>Lactarius</i>                   | 1 |
| Common Powderhorn             | <i>Cladonia coniocraea</i>         | 2 |
| Devil's matchstick            | <i>Pilophorus acicularis</i>       | 1 |
| Dragon Horn                   | <i>Cladonia squamosa</i>           | 1 |
| Hairy Curtain Crust           | <i>Stereum hirsutum</i>            | 2 |
| Huckleberry Broom Rust Fungus | <i>Pucciniastrum goeppertianum</i> | 1 |
| Jellied bird's nest fungus    | <i>Nidula candida</i>              | 2 |
| Madrone Antrodia              | <i>Antrodia madronae</i>           | 2 |
| Many-forked cladonia          | <i>Cladonia furcata</i>            | 1 |
| Mealy Pixie Cup               | <i>Cladonia chlorophaea</i>        | 1 |
| Nitrous Bonnet                | <i>Mycena leptcephala</i>          | 1 |
| Northern Red Belt             | <i>Fomitopsis mounceae</i>         | 2 |
| Ochre Bracket                 | <i>Fomitopsis ochracea</i>         | 5 |
| Pinewood Gingertail           | <i>Xeromphalina campanella</i>     | 1 |
| Red belted conk               | <i>Fomitopsis pinicola</i>         | 1 |
| Rosy Conk                     | <i>Rhodofomes cajanderi</i>        | 1 |
| Crust Fungus                  | <i>Stereum ochraceoflavum</i>      | 1 |
| Tree Lungwort                 | <i>Lobaria pulmonaria</i>          | 6 |
| True morels                   | <i>Morchella</i>                   | 1 |
| Turkey-tail                   | <i>Trametes versicolor</i>         | 3 |
| White Fibrecap                | <i>Inocybe geophylla</i>           | 1 |



Japanese Wireweed - image by: stevenahayward



Sea Cauliflower - image by: sharilemieux



Splendid iridescent seaweed - image by: sharilemieux

|   |                                   |                               |
|---|-----------------------------------|-------------------------------|
| Woolly bird's nest fungus                 | <i>Nidula niveotomentosa</i>      | 1                             |
| <b>Total Number of Species</b>            | <b>29</b>                         |                               |
| <b>Total Observations</b>                 |                                   | <b>51</b>                     |
| <b>Algae</b>                              |                                   |                               |
| <b>Common Name</b>                        | <b>Scientific Name</b>            | <b>Number of Observations</b> |
| Black Pine Seaweed                        | <i>Neorhodomela larix</i>         | 1                             |
| Beanweed                                  | <i>Scytosiphon lomentaria</i>     | 1                             |
| Broadleaf sea lettuce                     | <i>Ulva lactuca</i>               | 4                             |
| Bulb Seaweed                              | <i>Colpomenia peregrina</i>       | 1                             |
| Eelgrass                                  | <i>Zostera marina</i>             | 1                             |
| Japanese Wireweed                         | <i>Sargassum muticum</i>          | 3                             |
| Red algae                                 | <i>Pyropia</i>                    | 2                             |
| Red Sea Spaghetti                         | <i>Gracilariopsis andersonii</i>  | 1                             |
| Rockweed                                  | <i>Fucus distichus</i>            | 10                            |
| Sea Belt                                  | <i>Saccharina latissima</i>       | 2                             |
| Sea Cauliflower                           | <i>Leathesia marina</i>           | 1                             |
| Sea Hair                                  | <i>Ulva intestinalis</i>          | 1                             |
| Sea Plantain                              | <i>Plantago maritima</i>          | 1                             |
| Sea Sandwort                              | <i>Plantago maritima</i>          | 1                             |
| Sea spaghetti                             | <i>Plantago maritima</i>          | 1                             |
| Splendid iridescent seaweed               | <i>Mazzaella splendens</i>        | 1                             |
| Succulent seaweed                         | <i>Sarcodiotheca gaudichaudii</i> | 1                             |
| Sugar kelp                                | <i>Laminaria saccharina</i>       | 1                             |
| Turkish Towel                             | <i>Chondracanthus exasperatus</i> | 1                             |
| Turkish Washcloth                         | <i>Mastocarpus papillatus</i>     | 1                             |
| <b>Total Number of Species</b>            | <b>20</b>                         |                               |
| <b>Total Observations</b>                 |                                   | <b>35</b>                     |
| <b>Total Number of Species Observed</b>   | <b>324</b>                        |                               |
| <b>Total Number of Flora Observations</b> |                                   | <b>964</b>                    |



Barred Owl - image by: bombusmixtus



Greater Yellowlegs - image by: jey42



Mallard - image by: jey42

Table 2. Compiled Findings from April 8, 9, and 10, 2022 MABR BioBlitz Fauna Species.

| Birds of Prey                  |                                 |                        |
|--------------------------------|---------------------------------|------------------------|
| Common Name                    | Scientific Name                 | Number of Observations |
| Bald Eagle                     | <i>Haliaeetus leucocephalus</i> | 2                      |
| Barred Owl                     | <i>Strix varia</i>              | 1                      |
| Cooper's Hawk                  | <i>Accipiter cooperii</i>       | 1                      |
| Common Merganser               | <i>Mergus merganser</i>         | 3                      |
| Northern Pygmy-Owl             | <i>Glaucidium gnoma</i>         | 1                      |
| <b>Total Number of Species</b> | <b>5</b>                        |                        |
| <b>Total Observations</b>      |                                 | <b>8</b>               |
| Shore Birds                    |                                 |                        |
| Common Name                    | Scientific Name                 | Number of Observations |
| Common Merganser               | <i>Mergus merganser</i>         | 3                      |
| Greater Yellowlegs             | <i>Tringa melanoleuca</i>       | 4                      |
| <b>Total Number of Species</b> | <b>2</b>                        |                        |
| <b>Total Observations</b>      |                                 | <b>7</b>               |
| Waterfowl                      |                                 |                        |
| Common Name                    | Scientific Name                 | Number of Observations |
| Glaucous winged- gulls         | <i>Larus glaucescens</i>        | 2                      |
| Seagulls                       | <i>Laridae</i>                  | 1                      |
| Lesser Scaup                   | <i>Aythya affinis</i>           | 2                      |
| Mallard                        | <i>Anas platyrhynchos</i>       | 5                      |
| Ring-necked Duck               | <i>Aythya collaris</i>          | 1                      |
| Short-billed Gull              | <i>Larus brachyrhynchus</i>     | 2                      |
| <b>Total Number of Species</b> | <b>6</b>                        |                        |
| <b>Total Observations</b>      |                                 | <b>13</b>              |



Audobon's Warbler - image by: akradish



Dark-eyed Junco - image by: akradish



American Bullfrog - image by: jey42

| Forest Birds                   |                                    |                        |
|--------------------------------|------------------------------------|------------------------|
| Common Name                    | Scientific Name                    | Number of Observations |
| American Crow                  | <i>Corvus brachyrhynchos</i>       | 3                      |
| American Robin                 | <i>Turdus migratorius</i>          | 5                      |
| Anna's Hummingbird             | <i>Calypte anna</i>                | 2                      |
| Audubon's Warbler              | <i>Setophaga coronata auduboni</i> | 1                      |
| Canada Jay                     | <i>Perisoreus canadensis</i>       | 1                      |
| Chipping Sparrow               | <i>Spizella passerina</i>          | 1                      |
| Dark-eyed Junco                | <i>Junco hyemalis</i>              | 1                      |
| Northern Flicker               | <i>Colaptes auratus</i>            | 1                      |
| Northern Red-shafted Flicker   | <i>Colaptes auratus cafer</i>      | 1                      |
| Northern Rough-winged Swallow  | <i>Stelgidopteryx serripennis</i>  | 1                      |
| Orange-crowned Warbler         | <i>Leiothlypis celata</i>          | 3                      |
| Pileated Woodpecker            | <i>Dryocopus pileatus</i>          | 2                      |
| Red-breasted Sapsucker         | <i>Sphyrapicus ruber</i>           | 4                      |
| Red-winged Blackbird           | <i>Agelaius phoeniceus</i>         | 2                      |
| Ruby-crowned Kinglet           | <i>Regulus calendula</i>           | 1                      |
| Rufous Hummingbird             | <i>Selasphorus rufus</i>           | 1                      |
| Song Sparrow                   | <i>Melospiza melodia</i>           | 3                      |
| Varied Thrush                  | <i>Ixoreus naevius</i>             | 1                      |
| Yellow-rumped Warbler          | <i>Setophaga coronata</i>          | 5                      |
| <b>Total Number of Species</b> | <b>19</b>                          |                        |
| <b>Total Observations</b>      |                                    | <b>39</b>              |
| Amphibians                     |                                    |                        |
| Common Name                    | Scientific Name                    | Number of Observations |
| American Bullfrog              | <i>Lithobates catesbeianus</i>     | 1                      |
| <b>Total Number of Species</b> | <b>1</b>                           |                        |
| <b>Total Observations</b>      |                                    | <b>1</b>               |



Common Gartersnake - image by: take2thetrails



Eastern Cottontail - image by: jey42



Formicine Ants - image by: stevenhayward

| Reptiles                       |  |                        |
|--------------------------------|--|------------------------|
| Common Name                    | Scientific Name                        | Number of Observations |
| Common Gartersnake             | <i>Thamnophis sirtalis</i>             | 2                      |
| Northwestern Garter Snake      | <i>Thamnophis ordinoides</i>           | 1                      |
| <b>Total Number of Species</b> | <b>2</b>                               |                        |
| <b>Total Observations</b>      |  | <b>3</b>               |
| Mammals                        |  |                        |
| Common Name                    | Scientific Name                        | Number of Observations |
| Columbian Black-tailed Deer    | <i>Odocoileus hemionus columbianus</i> | 1                      |
| Eastern Cottontail             | <i>Sylvilagus floridanus</i>           | 1                      |
| <b>Total Number of Species</b> | <b>2</b>                               |                        |
| <b>Total Observations</b>      |  | <b>2</b>               |
| Insects and Arachnids          |  |                        |
| Common Name                    | Scientific Name                        | Number of Observations |
| Formicine Ants                 | <i>Lasius</i>                          | 1                      |
| Fuzzy-Horned Bumble Bee        | <i>Bombus mixtus</i>                   | 1                      |
| Greater Bee Flies              | <i>Bombylius</i>                       | 1                      |
| Non biting midges/lake flies   | <i>Chironomus</i>                      | 1                      |
| Odorous House Ant              | <i>Tapinoma sessile</i>                | 1                      |
| Orange-rumped Bumble Bee       | <i>Bombus melanopygus</i>              | 1                      |
| Small Winter Stoneflies        | <i>Capniidae</i>                       | 2                      |
| Vancouver Island Bumble Bee    | <i>Bombus vancouverensis</i>           | 1                      |
| Western Carpenter Ant          | <i>Camponotus modoc</i>                | 1                      |
| Western Thatching ants         | <i>Formica obscuripes</i>              | 3                      |
| <b>Total Number of Species</b> | <b>10</b>                              |                        |
| <b>Total Observations</b>      |  | <b>13</b>              |





Prickly Sculpin - image by: akradish

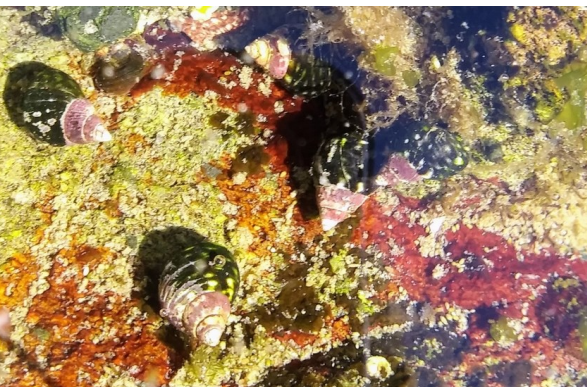


Pacific Oyster - image by: jey42



Pacific Banana Slug - image by: take2thetrails

| Fish                           |                                 |                        |
|--------------------------------|---------------------------------|------------------------|
| Common Name                    | Scientific Name                 | Number of Observations |
| Prickly Sculpin                | <i>Cottus asper</i>             | 1                      |
| <b>Total Number of Species</b> | <b>1</b>                        |                        |
| <b>Total Observations</b>      |                                 | <b>1</b>               |
| Bivalves                       |                                 |                        |
| Common Name                    | Scientific Name                 | Number of Observations |
| Butter clam                    | <i>Saxidomus gigantea</i>       | 1                      |
| Northern Bay Mussel            | <i>Mytilus trossulus</i>        | 1                      |
| Nuttall's Cockle               | <i>Clinocardium nuttallii</i>   | 1                      |
| Pacific Gaper                  | <i>Tresus nuttallii</i>         | 1                      |
| Pacific Littleneck Clam        | <i>Leukoma staminea</i>         | 1                      |
| Pacific Oyster                 | <i>Magallana gigas</i>          | 5                      |
| Purple Mahogany Clam           | <i>Nuttallia obscurata</i>      | 6                      |
| White Macoma                   | <i>Rexithaerus secta</i>        | 1                      |
| <b>Total Number of Species</b> | <b>8</b>                        |                        |
| <b>Total Observations</b>      |                                 | <b>17</b>              |
| Mollusks                       |                                 |                        |
| Common Name                    | Scientific Name                 | Number of Observations |
| Checkered Periwinkle           | <i>Littorina scutulata</i>      | 2                      |
| Dog whelk                      | <i>Nucella lapillus</i>         | 1                      |
| Garden snail                   | <i>Helix aspersa</i>            | 1                      |
| Japanese False Cerith          | <i>Batillaria attramentaria</i> | 5                      |
| Leafy Hornmouth                | <i>Ceratostoma foliatum</i>     | 1                      |
| Lottia Limpets                 | <i>Lottia</i>                   | 1                      |
| Mask Limpet                    | <i>Lottia persona</i>           | 1                      |
| Mudflat snail                  | <i>Batillaria cumingi</i>       | 1                      |
| Pacific Banana Slug            | <i>Ariolimax columbianus</i>    | 1                      |
| Plate Limpet                   | <i>Lottia scutum</i>            | 1                      |



Red Turban Snail - image by: take2thetrails



Grainy Hermit Crab - image by: stevenhayward



Ochre Sea Star - image by: stevenhayward

|                                |                                 |           |
|--------------------------------|---------------------------------|-----------|
| Red Turban Snail               | <i>Pomaulax gibberosus</i>      | 1         |
| Ribbed Limpet                  | <i>Lottia digitalis</i>         | 1         |
| Robust Lancetooth Snail        | <i>Haplotrema vancouverense</i> | 1         |
| Sitka Periwinkle               | <i>Littorina sitkana</i>        | 2         |
| <b>Total Number of Species</b> | <b>14</b>                       |           |
| <b>Total Observations</b>      |                                 | <b>20</b> |

#### Crustaceans and Arthropods

| Common Name                    | Scientific Name                | Number of Observations |
|--------------------------------|--------------------------------|------------------------|
| Acorn Branacle                 | <i>Balanus glandula</i>        | 1                      |
| Grainy Hermit Crab             | <i>Pagurus granosimanus</i>    | 1                      |
| Dungeness Crab                 | <i>Metacarcinus magister</i>   | 1                      |
| Northern Acorn Barnacle        | <i>Semibalanus balanoides</i>  | 1                      |
| Pacific Acorn Barnacle         | <i>Balanus glandula</i>        | 3                      |
| Red Rock Crab                  | <i>Cancer productus</i>        | 1                      |
| Rock-barnacles                 | <i>Balanus</i>                 | 1                      |
| Sand Hopper                    | <i>Talitrus saltator</i>       | 1                      |
| Yellow Shore Crab              | <i>Hemigrapsus oregonensis</i> | 3                      |
| <b>Total Number of Species</b> | <b>9</b>                       |                        |
| <b>Total Observations</b>      |                                | <b>13</b>              |

#### Sea Stars and Sand Dollars

| Common Name                    | Scientific Name               | Number of Observations |
|--------------------------------|-------------------------------|------------------------|
| Eccentric Sand Dollar          | <i>Dendraster excentricus</i> | 1                      |
| Ochre Sea Star                 | <i>Pisaster ochraceus</i>     | 2                      |
| <b>Total Number of Species</b> | <b>2</b>                      |                        |
| <b>Total Observations</b>      |                               | <b>3</b>               |



Moon jellyfish - image by: sharliemieux



Purple Ribbon Worm - image by: acl92

| Jellies and Anemones                |                               |                        |
|-------------------------------------|-------------------------------|------------------------|
| Common Name                         | Scientific Name               | Number of Observations |
| Moon jellyfish                      | <i>Aurelia labita</i>         | 1                      |
| <b>Total Number of Species</b>      | <b>1</b>                      |                        |
| <b>Total Observations</b>           |                               | <b>1</b>               |
| Worms                               |                               |                        |
| Common Name                         | Scientific Name               | Number of Observations |
| Purple Ribbon Worm                  | <i>Paranemertes peregrina</i> | 1                      |
| <b>Total Number of Species</b>      | <b>1</b>                      |                        |
| <b>Total Observations</b>           |                               | <b>1</b>               |
| <b>Total Fauna Species Observed</b> | <b>83</b>                     |                        |
| <b>Total Number of Observations</b> |                               | <b>143</b>             |

Note that the above tables refer to species as threatened, invasive, or introduced only in the context of BC. Species may have a different status elsewhere in North America or globally, even if they are not listed as such on this list.

**Table 3. Comparison of Results Between 2021 and 2022 Flora and Fauna Observations.**

| Year | Number of Flora Observations | Number of Flora Species | Number of Fauna Observations | Number of Fauna Species | Total Observations |
|------|------------------------------|-------------------------|------------------------------|-------------------------|--------------------|
| 2022 | 964                          | 324                     | 143                          | 83                      | <b>1,107</b>       |
| 2021 | 290                          | 167                     | 455                          | 222                     | <b>745</b>         |

As shown in Table 3, the total number of observations recorded increased from 745 in 2021 to 1,107 during the 2022 BioBlitz event, indicating increased participant engagement. Contributing to the increase in total observations is the increase in flora observations and number of species from 2021 to 2022.

Comparatively, there were fewer fauna observations and species recorded during the 2022 BioBlitz when compared to 2021. While there are many factors that may contribute to this, continued data collection through future BioBlitzing is needed to determine whether these observations are part of a larger trend.

**Table 4. Comparison of Results Between 2016-2019 BioBlitzing at Milner Gardens.**

| Year | Number of Flora Species | Number of Fauna Species | Total Observations |
|------|-------------------------|-------------------------|--------------------|
| 2019 | 84                      | 64                      | <b>148</b>         |
| 2018 | 96                      | 49                      | <b>145</b>         |
| 2017 | 171                     | 62                      | <b>233</b>         |
| 2016 | 108                     | 36                      | <b>144</b>         |

As shown in Table 4, the number of observations of both Flora and Fauna species greatly increased after the adoption of both the iNaturalist app and Blitzing Biosphere wide.

Utilizing iNaturalist has allowed for more observations to be recorded, as well as a far greater amount of data to be captured. While the Blitzing events from 2016-2019 were conducted solely at Milner Gardens, within a much shorter window of one day, the opportunities for participants to collect data were limited. However, the 2021 and 2022 Blitzing spanned over three days, providing participants with more time to collect observations and Blitz at their leisure. This format helped to greatly increase participation over the past two years', contributing to a greater and more holistic dataset which encompasses the entire Biosphere.

Another benefit of using the iNaturalist app has been the ability to record both the number of species found and the total number of observations. While Blitzing from 2016-2019 only included the total number of species and not the total number of observations. This has been a great advantage, as it has provided insight into species abundance, i.e. if there are multiple numbers of one species recorded. This key data will help provide insight into the populations, abundance and distribution of species throughout the MABR, while providing great background knowledge surrounding the health and prosperity of our ecosystems.

## Future Blitzing

Our future goals are to continue to Blitz the entire Biosphere region, while highlighting core areas such as Wildlife Management Areas, and Provincial, Regional and Municipal parks. These areas maintain some level of protection and may be able to be consistently surveyed year after year to allow for an accurate comparison between species data. Using the iNaturalist app to record observations has proven to be successful and will be implemented again in future BioBlitz events.

The Mount Arrowsmith Biosphere Region is a stunningly beautiful and diverse region with a myriad of species to discover and steward. Our team is inspired and eager to explore, engage, and educate one another about these important ecosystems and habitats that we all live in and share. We look forward to continuing the event throughout the MABR for years to come.

## References

iNaturalist. (n.d.). INaturalist. Retrieved May 30, 2022, from <https://www.inaturalist.org/>

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: Appendix A: Map of the Mount Arrowsmith Biosphere Region Boundary for the 2022 BioBlitz

