MUSHROOM CENSUS

WHITE BAY SOUTH

- Pollard's Point
- Sop's Arm

MAIN RIVER

- Canadian Heritage River
- Waterway Park

September 5-9, 2011

Supported by

The Model Forest of Newfoundland and Labrador, Forest Communities Program and
The Department of Environment and Conservation, Parks and Natural Areas Division, and Wildlife Division

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FORAY NEWFOUNDLAND AND LABRADOR

Photo: Maria Voitk

Photo: Michael Burzynski

Participants

Wet, above

Dry, below

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Photo: Roger Smith

PROGRAM

Monday September 5

Arrival, settle in, set up Lab in School
7:22 PM First Supper together

Tuesday September 6

7:30 AM Breakfast
8:30 AM Foray Main River Deep Valley Section
3:00 PM To School Lab for identifications
6:00 PM Supper
7:00 PM Identification

Wednesday September 7

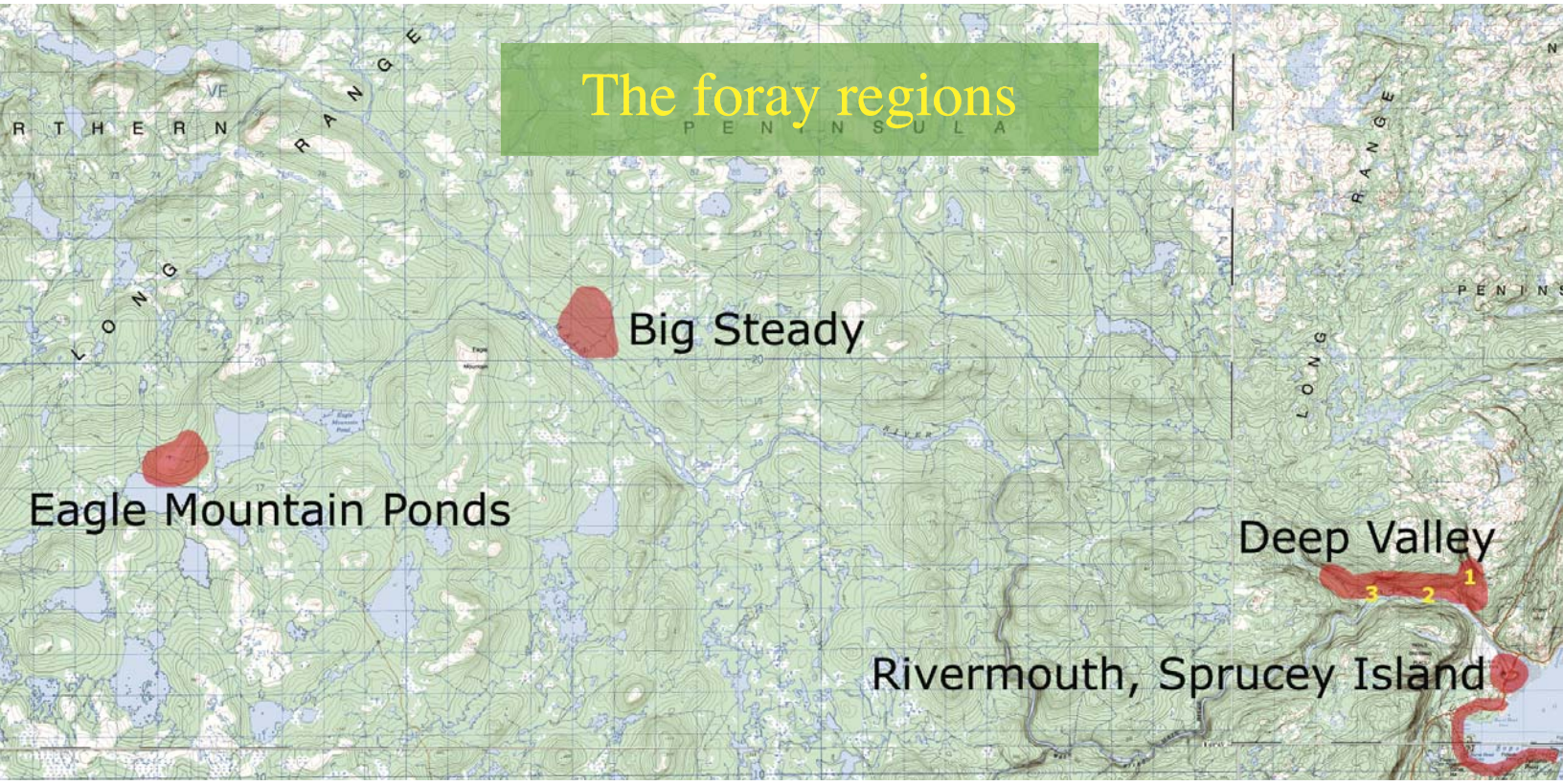
7:30 AM Breakfast together
9:00 AM Heliforay to the Big Steady and Eagle Mountain Ponds Sections
4:00 PM To School Lab for identifications
6:00 PM Supper
7:00 PM Identification

Thursday September 8

7:30 AM Breakfast
9:00 AM Foray Main Rivermouth, Sprucey Island
2:00 PM To School Lab for identifications
6:00 PM Supper
7:00 PM Finish identification. Pack up, all cars and gear, ready to leave in the AM.

Friday September 9

7:30 AM Breakfast together
9:00 AM Drive to Terra Nova Foray
1:00 PM Lunch on the road.
2:00 PM Arrive Terra Nova. Set up registration, lab, display tables, everything else!!!
6:00 PM Reception begins, and with it the Foray.



Rivermouth, Sprucey Island

49° 46’ N, 56° 54’ W
Elevation 8 m asl

Deep Valley

49° 47’ N, 56° 57’ W
Elevation 45 m asl

The Big Steady

49° 50’ N, 57° 13’ W
Elevation 288 m asl

Eagle Mountain Ponds

49° 49’ N, 57° 21’ W
Elevation 450 m asl

The Main River drainage system was surveyed from the height of land between east and west shores, through to the mouth, at the same latitude. Therefore, the primary variables between these sites were elevation and distance from the seashore. All sites were forested, the main tree being spruce. Alder grew along roadsides, communities and river banks. Birch appeared toward the seashore. Barrens, dispersed on highlands, were not surveyed. Bogs were encountered on the Eagle Mountain Ponds and Big Steady, sand near shore and on Sprucey Island.

In addition, various areas around the communities were surveyed and sampled. These samples were included with the Rivermouth section.

Headquarters

Riversea Resort, Pollard’s Point, NL

Photo: Roger Smith

HABITAT

Photo: Maria Voitk

Rivermouth, Sprucey Island

Photo: Maria Voitk

HABITAT

Photo: Maria Voitk

Deep Valley

Photo: Roger Smith

HABITAT

Photo: Michael Burzynski

Big Steady

Photo: Roger Smith

HABITAT

Photo: Maria Voitk

Eagle Mountain Ponds

Photo: Maria Voitk

SPECIES LIST AND DISTRIBUTION

Trail numbers: 1= Rivermouth, Sprucey Island & communities; 2 = Steep Valley; 3 = Big Steady; 4 = Eagle Mountain Ponds. TOT = total records for the species. Species column lists all species identified during the foray. TOT column lists the number of collections of a species. Remaining columns—same information for each trail. Colour codes: **Bold red print** = "Common" species (Mean + 2 Std Dev above average number of collections; in this case 6 or more). Green background = "lichenized" mushroom species—not collected before, so all are new. Because their collection has been different, they have not been added to the cumulative list. Blue background = non-lichenized mushroom species NEW to our cumulative list (ie not collected during previous forays).

Species	TOT	1	2	3	4
Alectoria sarmentosa	1				1
Amanita flavoconia	1		1		
Amanita fulva	5	1	3		1
Amanita muscaria var. guessowii	2	1	1		
Amanita porphyria	9	1	3	5	
Ampulloclitocybe clavipes	1		1		
Antrodia heteromorpha	1		1		
Apiosporina morbosa	1		1		
Arrhenia sphagnicola	1				1
Ascocoryne sarcoides	1		1		
Baeomyces rufus	1		1		
Bankera violascens	1	1			
Bellemerea cinereorufescens	1				1
Bisporella citrina	6		2	4	
Bryoria americana	1	1			
Bryoria furcellata	1	1			
Calocera cornea	3			3	
Calocybe fallax	1	1			
Cantharellus cibarius var.	3		3		
Cerrena unicolor	1	1			
Cetraria islandica subsp.	1				1
Chalciporus piperatus	2	2			
Chlorociboria aeruginosa	2	1	1		
Cistella acuum	1	1			
Cladonia carneola	1				1
Cladonia cenotea	1				1
Cladonia chlorophaea	1		1		
Cladonia cornuta	1		1		
Cladonia crispata	1		1		
Cladonia cristatella	2		2		
Cladonia deformis	1				1
Cladonia digitata	1				1
Cladonia farinacea	1	1			
Cladonia gracilis ssp. turbinata	1		1		
Cladonia gracilis subp. elongata	1				1
Cladonia groenlandica	1				1
Cladonia macilenta	1		1		
Cladonia maxima	1		1		
Cladonia mitis	1		1		
Cladonia multiformis	1		1		
Cladonia ochrochlora	1		1		

Species	TOT	1	2	3	4
Cladonia pleurota	1				1
Cladonia pyxidata	1		1		
Cladonia rangiferina	1		1		
Cladonia rei	1	1			
Cladonia scabriuscula	1		1		
Cladonia stellaris	1	1			
Cladonia stygia	1				1
Cladonia subulata	1		1		
Cladonia symphycarpa	1	1			
Cladonia verticillata	1		1		
Clavulina coralloides	5	1	3		1
Clitocybe sinopica	1	1			
Collybia cirrhata	1		1		
Collybia tuberosa	3		2	1	
Coltricia perennis	3	2	1		
Cordyceps ophioglossoides	1	1			
Cortinarius alpinus	1			1	
Cortinarius anomalellus	3			3	
Cortinarius anomalus	2		1	1	
Cortinarius armeniacus	3	2		1	
Cortinarius armillatus	6	4	2		
Cortinarius biformis	2	1			1
Cortinarius brunneus	6		5		1
Cortinarius callisteus	1	1			
Cortinarius camphoratus	3	2		1	
Cortinarius caperatus	1	1			
Cortinarius cinnamomeus	1		1		
Cortinarius collinitus	3	1	1	1	
Cortinarius croceus	1		1		
Cortinarius decipiens	1		1		
Cortinarius depressus	1			1	
Cortinarius diasemospermus var. leptospermus	1		1		
Cortinarius erugatus	1		1		
Cortinarius evernius	3			2	1
Cortinarius fervidus	1		1		
Cortinarius flexipes	5	1	1	3	
Cortinarius flexipes var. flabellus	1			1	
Cortinarius flexipes var. inolens	2	1	1		
Cortinarius fulvescens	1				1
Cortinarius fulvo-ochrascens	1		1		
Cortinarius gentilis	1		1		
Cortinarius glandicolor	1		1		
Cortinarius incognitus	4	1	1	2	
Cortinarius junghuhnii	1		1		
Cortinarius limonius	1	1		1	
Cortinarius malicorius	1		1		
Cortinarius mucifluus	2			2	
Cortinarius parvannulatus	1			1	
Cortinarius pholideus	2	1	1		
Cortinarius porphyropus	1	1			
Cortinarius privignoides	1		1		
Cortinarius sanguineus	1		1		
Cortinarius scaurus	1				1
Cortinarius semisanguineus	3	2		1	
Cortinarius traganus	4	4			
Cortinarius umbrinolens	1		1		
Cortinarius varius	1			1	
Cortinarius vibratilis	1	1			

Species	TOT	1	2	3	4
Craterellus tubaeformis	7		2	3	2
Crinipellis setipes	1		1		
Cudonia circinans	1	1			
Cystoderma amianthinum	9	2	2	4	1
Cystoderma granulosum	1	1			
Dacrymyces chrysospermus	2	1	1		
Dibaeis baeomyces	1	1			
Diploschistes scruposus	1				1
Endogone pisiformis	2		1	2	
Entoloma bicolor	1	1			
Entoloma strictius var.	2	2			
Erysiphe sordida	1	1			
Exidia saccharina	3			3	
Exobasidium cassandrae	1				1
Exobasidium juelianum	1	1			
Exobasidium oxycocci	1				1
Exobasidium rhododendri	1	1			
Fomitopsis pinicola	5	1	2	2	
Galerina paludosa	4		1	1	2
Gloeophyllum sepiarium	4	1		3	
Gowardia nigricans	1				1
Gymnopilus junonius	1		1		
Gymnopilus penetrans	2		1	1	
Gymnopilus picreus	1		1		
Gymnopus confluens	1		1		
Gymnopus dryophilus	2		2		
Gymnosporangium cornutum	1				1
Hapalopilus nidulans	1		1		
Helvella macropus	1			1	
Humaria hemisphaerica	2		2		
Hydnellum caeruleum	1	1			
Hydnellum scrobiculatum	2	1	1		
Hydnum albomagnum	1			1	
Hydnum repandum	2		1	1	
Hydnum umbilicatum	5			3	2
Hygrocybe acutoconica	2	2			
Hygrocybe borealis	1	1			
Hygrocybe cantharellus	2	1		1	
Hygrocybe conica	3	1	2		
Hygrocybe miniata	1				1
Hygrocybe phaeococcinea	3	2	1		
Hygrocybe squamulosa	1		1		
Hypholoma elongatum	2	1		1	
Hypholoma udum	2			1	1
Hypocrea pulvinata	1			1	
Hypogymnia incurvoides	1		1		
Hypogymnia tubulosa	1		1		
Hypogymnia vittata	1		1		
Hypomyces lactifluorum	1	1			
Infundibulicybe squamulosa	1		1		
Inocybe geophylla	4		4		
Inocybe mixtilis	1	1			
Inonotus obliquus	1	1			
Ischnoderma resinosum	4		1	1	2
Japewia subaurifera	1	1			
Laccaria bicolor	8	2	4	2	
Laccaria longipes	4		2		2
Laccaria nobilis	2	1		1	
Lachnellula agassizii	2		1	1	
Lactarius affinis	3		2		1

Species	TOT	1	2	3	4
Lactarius camphoratus	3		2		1
Lactarius deceptivus	2			1	1
Lactarius deterrimus	2	1		1	
Lactarius glyciosmus	6		3	3	
Lactarius hibbardae	3	1		2	
Lactarius mucidus	1		1		
Lactarius rufus	1			1	
Lactarius torminosus	1		1		
Lactarius trivialis	1			1	
Lactarius vinaceorufescens	1	1			
Lecanora intricata	1				1
Lecanora polytropa	1				1
Lecanora symmicta	1				1
Leccinum holopus	4	1	3		
Leccinum scabrum	6	4	2		
Leccinum snellii	2	2			
Leccinum variicolor	2	2			
Leccinum vulpinum	3	3			
Lecidea pullata	1				1
Leotia lubrica	6	1	2	3	
Lepista martiorum	1		1		
Leptogium saturninum	1		1		
Lobaria pulmonaria	1		1		
Lycoperdon perlatum	1		1		
Lycoperdon pyriforme	1		1		
Marasmius androsaceus	4		1	3	
Marasmius capillaris	1		1		
Melampsoridium betulinum	1		1		
Melanelia hepatizon	1				1
Mycena epipterygia	1				1
Mycoblastus affinis	1		1		
Mycoblastus sanguinarius	1				1
Naohidemyces vacciniorum	1				1
Neocudoniella radicella	1		1		
Nephroma arcticum	1		1		
Nephroma bellum	1		1		
Nephroma laevigatum	1		1		
Nyssopsora clavellosa	1	1			
Ochrolechia frigida	1				1
Orbilia curvatispora	2	1		1	
Parmelia squarrosa	1		1		
Parmeliopsis ambigua	1				1
Parmeliopsis capitata	1		1		
Parmeliopsis hyperopta	1		1		
Paxillus involutus	1				1
Peltigera aphthosa	1		1		
Peltigera canina	1	1			
Peltigera leucophlebia	1	1			
Peltigera neopolydactyla	1		1		
Peltigera rufescens	1		1		
Pertusaria amara	1				1
Pertusaria dactylina	1				1
Peziza badia	1		1		
Phaeolus schweinitzii	1	1			
Phellinus nigricans	2	1	1		
Phlebiella vaga	1		1		
Piloderma croceum	1		1		
Piptoporus betulinus	4	2	2		
Placynthiella uliginosa	1		1		
Platismatia norvegica	1				1

Species	TOT	1	2	3	4
Plectocarpon lichenum	1		1		
Plicaturopsis crispa	2		2		
Pluteus cervinus	1		1		
Polyporus melanopus	1		1		
Polyporus varius	1		1		
Postia stiptica	1		1		
Protoparmelia badia	1				1
Pseudohydnum gelatinosum	9	1		2	6
Puccinia poarum	1	1			
Pucciniastrum epilobii	1	1			
Pucciniastrum goeppertianum	3	1	2		
Ramalina thrausta	1		1		
Ramaria pallidosaponaria	1	1			
Ramboldia cinnabarina	1				1
Ramularia taraxaci	1	1			
Rhodocollybia maculata	1			1	
Rhodocollybia prolixa var. distorta	1		1		
Rhytisma prini	1	1			
Rickenella fibula	1	1	1		
Russula aeruginea	1	1			
Russula aquosa	6		4	1	1
Russula brevipes	1	1			
Russula compacta	1		1		
Russula densifolia	1	1			
Russula paludosa	9	3	2	3	1
Russula peckii	4		1	3	
Scleroderma bovista	2	2			
Stereocaulon condensatum	1	1			
Stereocaulon tomentosum	1		1		
Stereum sanguinolentum	1			1	
Stropharia alcis	2		2		
Suillus glandulosus	1			1	
Tapesia hydrophila	1	1			
Tephrocybe palustris	1				1
Trapeliopsis granulosa	1		1		
Tremella encephala	1		1		
Tremella foliacea	3	1		2	
Tremella mesenterica	2		2		
Trichaptum abietinum	2		1	1	
Trichaptum fuscoviolaceum	2			1	1
Trichaptum laricinum	1			1	
Tricholoma imbricatum	1		1		
Tricholoma inamoenum	1	1			
Tricholoma sejunctum	1	1			
Tricholoma transmutans	3		2	1	
Tricholoma virgatum	1		1		
Tricholomopsis decora	5		3	2	
Tuckermannopsis americana	1				1
Tylopilus chromapes	1		1		
Tylopilus felleus	7	1	6		
Tyromyces chioneus	1	1			
Uredinopsis americana	2		2		
Usnea dasypoga	1	1			
Varicellaria rhodocarpa	1				1
Veluticeps abietina	2	1		1	
Vulpicida pinastri	1		1		
Xerocomus gracilis	3	2	1		
Xeromphalina campanella	2			2	
Xeromphalina cornui	1		1		
Xylographa abietina	1				1
Xylographa vitiligo	1		1		
Total number collections	**503**	**132**	**208**	**121**	**85**
Total number species	**280**	**100**	**145**	**64**	**59**

ANALYSIS OF DATA

Over three days, 13 people collected, identified, catalogued, photographed and archived 280 fungal species, including 77 lichens. This is a high yield for an extraordinarily poor year for mushrooms, suggesting that there is great fungal diversity in White Bay South. Collecting in the Deep Valley Section was hampered by a 100mm rainstorm. Excessive water from the aftermath of the rainfall prevented access to as much varied habitat as planned in the Big Steady Section. The Eagle Mountain Ponds area was erroneously selected by the Universal Helicopter pilot, unfamiliar with the location of the planned Four Ponds Section.

Lichens

Lichens were collected for the first time this year. Because of their nature, the collection method differed from our traditional method for collecting mushrooms. All lichens were collected by Ted Ahti, a single collection of each species, recording it for the first site encountered. Therefore, the data do not reflect their abundance or distribution. Collection was selective; i.e. not all species encountered were collected. For example, the commonest of lichens (the weeds of the lichen community) were not collected. The lichen list includes two species new to our province: *Cladonia farinacea* and *Japewia subaurifera*. Collected lichens were taken to be archived in the Herbarium of the University of Helsinki (H).

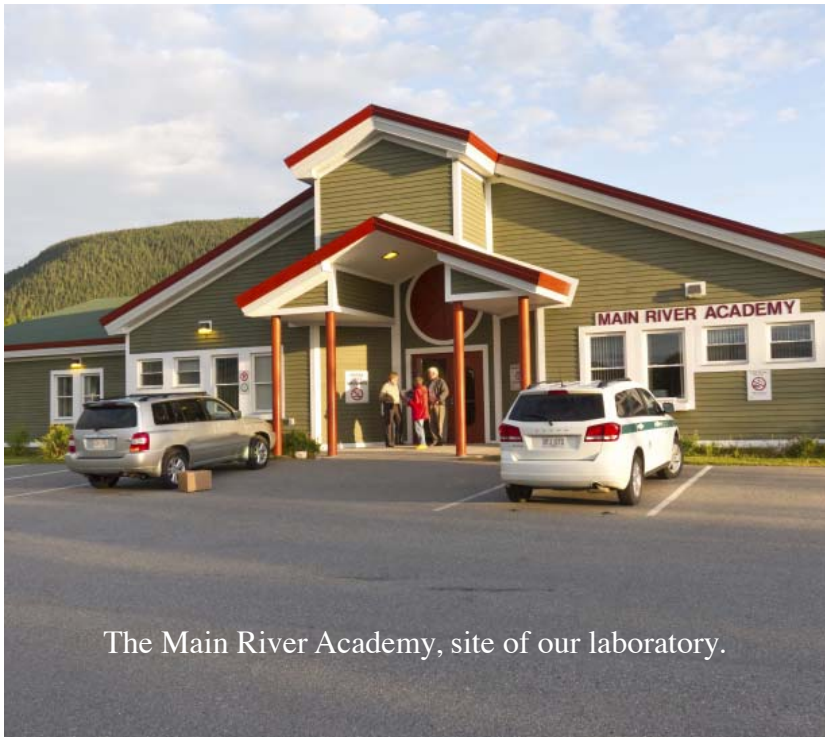
Mushrooms

The change in the tree population is the most obvious difference in the habitat along the four sections of the Main River watershed. All regions have a large black spruce component, but birch, absent at the height of land, becomes evident to common near the coast toward the seashore, where it equals or even replaces spruce in some areas. Alder, a pioneer species at home in the sandier soil of the coastal regions, also thrives there. The Deep Valley section is a natural transition zone, with a mixture of all tree species.

The mushrooms parallel the trees. On the higher ground spruce partners, both mycorrhizal and saprobic, predominate (*Cortinarius brunneus, Craterellus tubaeformis, Pseudohydnum gelatinosum*). Birch associates, absent in the higher country, become apparent in the Deep Valley and Rivermouth Sections (*Cortinarius armillatus, Lactarius glyciosmus, Leccinum scabrum*). The Deep Valley Section, meeting place of coniferous and deciduous trees, had the greatest tree diversity, matched by the greatest diversity of mushroom species.

Although there were several corticate and polypore species (wood decayers expected in an old growth forest), it is interesting to note that both abundance and diversity of these species was greater in Terra Nova National Park (see Foray 2011 Report). This differs from the abundance and diversity of all species, which were greater along the Main River than Terra Nova. The populations between these two regions differed significantly, towit

1. except for *Craterellus tubaeformis*, there was no overlap of any common species in the two regions, and
2. there also was no overlap of the new species contributed from each region to our cumulative list.



The Main River Academy, site of our laboratory.

Photo: Roger Smith

MUSHROOMS AS NONTIMBER FOREST PRODUCTS IN WHITE BAY SOUTH

Potential species

This census revealed five common or reasonably common good edible mushroom species that grow in the area, all easily accessible from the communities: *Chantarellus cibarius* var. *roseocanus* (chanterelle), *Craterellus tubaeformis* (winter chanterelle), *Russula paludosa* (swamp russula), *Russula peckii* (Peck's russula) [below: clockwise from upper left] and *Hydnum umbilicatum* (sweet tooth) [larger picture, p 16].

Chanterelle season was essentially over at the time, so finding some of these at the time suggests, that they may be more plentiful in the area earlier in the summer. This warrants further exploration because the sandy habitat, especially in the Deep Valley and coastal areas, is highly suitable. The winter chanterelle was very plentiful at the time and can be expected to be bountiful for at least a month. Elsewhere it is often found in older balsam fir forests with fallen dead wood covered by thick moss. Both of these species are also known to associate with spruce.

As on the Great Northern Peninsula, *Russula paludosa* was common here. *Russula peckii*, an equally good edible, was not as common, but abundant enough that modest to moderate quantities could be harvested throughout its season.

In addition to these species, identified at the time of our census, we heard from local people that at least one knowledgeable person comes to the area regularly to collect edibles, among them *Boletus edulis* (king bolete) and *Tricholoma matsutake* (matsutake). The season for king boletes was over at the time, so we have no way of commenting whether this species exists in the area or in what quantities. Matsutake, a conifer partner that likes sandy soil and moss and

Photos: Roger Smith

duff cover, is quite likely in the area, especially around the coast and in the Deep Valley Section. That we did not collect it does not exclude the possibility that it is here, but if so, we are unable to comment on quantities.

Practical considerations

The chanterelles and the less abundant sweet tooth offer the best realistic opportunities. The winter chanterelle is abundant and the summer chanterelle may well be. Both are easy to recognize and reasonably difficult to confuse with undesirable species. *Chantarellus cibarius* can be confused with *Hygrophoropsis aurantiaca*, which acts as a gastrointestinal irritant for some people. Although we did not record this species, it can be expected in the habitat. If chanterelles are abundant enough to support small scale harvesting, harvesters need to be instructed in the features that distinguish this species from the chanterelle. *Craterellus tubaeformis* and *Hydnum umbilicatum* present less risk of confusion with undesirable species. The other advantage of these three species is that they are reasonably resistant to slugs and insects and reasonably able to withstand handling without showing effects of damage, sweet tooth being a bit more fragile.

The russulas are not as easy subjects for commercial harvesting. The possibility for confusion with other species is much greater and considerably more teaching is required to be confident in identifying either one without including undesirable lookalikes. *Russula paludosa* has a wide variation of cap colour in our area, increasing the possibility of misidentification. *Russula peckii* is quite easy to identify without confusion, but the diagnostic characteristics are subtle and require some experience. Both are also subject to significant slug and insect damage, so that obtaining appealing specimens is more difficult. Furthermore, they are much more fragile, need to be handled with care throughout collection and processing; they do not keep well and must be processed or transported within a very short period after collection.

If there is enough *Boletus edulis* in the region to support even partial small scale commercial collection (doubtful, given its relative scarcity elsewhere in the province), the comments regarding russulas apply to it as well. The potential for misidentification is high (e.g. *Tylopilus felleus*, a common species) and it is much prized by slug and insect alike. Despite its robust shape and large size, it does not keep well and deteriorates easily, requiring quick processing. Matsutakes, if present, are somewhat better. Once the odour is learned, confusion with other species is unlikely. They are hardier than russulas, although not nearly as good as the chanterelles in that regard. If marketable, they command the best price.

Putting all this together, the potential for significant alternate income from mushrooms to the local communities is likely of minimal significance. Even an abundant species like *Craterellus tubaeformis*, with a relatively long fruiting time, is available for no more than 4-6 weeks at best. Its abundance would not sustain more than a very small handful of harvesters. The vagaries of nature, as demonstrated by this mycodepauperate year, would discourage all but the most dedicated. The communities are too remote to be likely distributors for product from elsewhere. Local quantities will probably remain too small and fruiting time too short to support major infrastructure, so that the profits possible from large-scale processing and distribution are unavailable. The biggest potential problem is that encountered elsewhere in the province with berries and the world over with most wild produce: local people are no longer willing to spend significant effort and time in the woods harvesting in return for a relatively small benefit.

Summary

1. Edible mushrooms in the WBS area are unlikely sources of significant alternate economic support.
2. They have the potential to augment the income of a few enthusiasts, who like to spend their time in the woods anyway, at the level of a small mom-and-pop operation.
3. The primary potential use for this resource would be as a supplement to the normal diet of the local population.

Caveat

The list of species, including edibles, and their estimated abundance are based on direct observation over a short time. Whether they would sustain an industry to augment local economy is speculation. Like any speculation, it may not be factual; like any consultation, its recipient is welcome to accept or reject it, based on other knowledge and experience.

Photos: Various authors
Cover photo: Michael Burzynski


Photo: Maria Voitk

Photo: Roger Smith