

# Control Analysis E2C 2014

## Introduction

The 2014 Version of the E2C returned to the forestry lands south of Halifax International airport for a second year following a well-received 2013 event. The course-planning team worked hard through the fall and winter to open up new areas and improve mapping. The relatively mild early winter allowed easier travel in the woods but prevented the use of frozen lakes for access to some more challenging areas. Heavy snow falls in March/April made for some tough going in the latter stages of the course design. Holding an event in an active forestry area has its challenges. New clear-cutting necessitated some last minute changes to the course.

The 2014 Challenge followed the format of recent years with a variation of tasks. The majority of the 60 controls followed the typical Score-Orienteering Event. The main course map, plotted at 1:25,000 was supplemented by a 1:10,000 Line-Orienteering Challenge map and a 1:10,000 "Distance-Bearing" Challenge Map. In addition, four of the controls had to be plotted by the competitors from the given grid-reference. These additional challenges have proved popular with competitors (from results of post-event surveys) in past years

For those who competed in any of the earlier E2C events held at the old Bowater Mersey location, the most noticeable difference between the two locations is the more compact design of the current course. Fewer roads and trails favour accurate navigation through the woods rather than speed running on roads.

Across all Categories a total of 79 teams started the 8 Hour Event and 65 the 24 hour event. All controls "found" are included in the control analysis, including those found by teams who withdrew or finished over the time limit. Because different tactics are employed in the 8 hour and the 24 hour events a separate analysis was performed for each event.

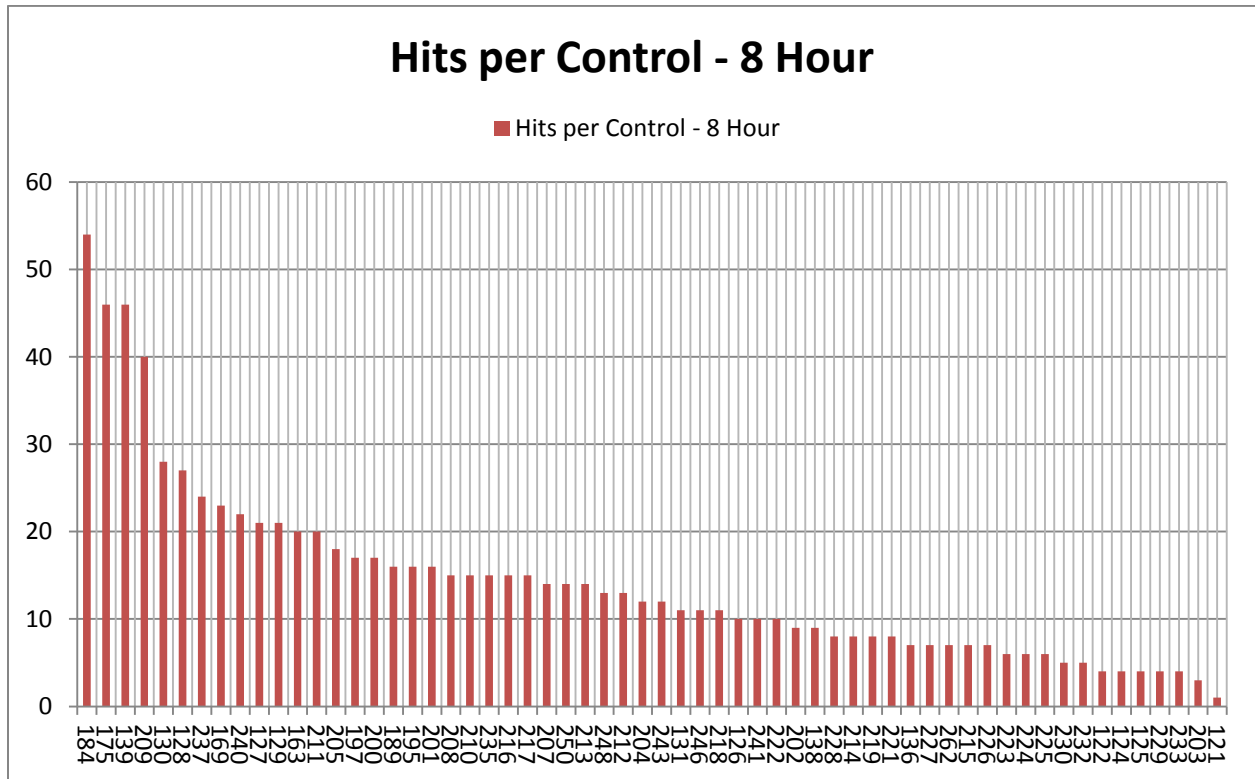
## **Control Analysis**

### Number of Hits per Control – 8 Hour Event

As in recent years the 8 hours competitors had "unrestricted" access to all 60 controls. A copy of the master control map is included below or the maps can be viewed at the E2C Website - <http://ecoendurancechallenge.ca/category/maps/> The relative "compactness" of the course compared to the old Bowater-Mersey location is demonstrated in Figure 1 which shows, somewhat surprisingly, that all 60 of the controls were visited at least once by the 8 hour teams. Control 121 (40 point value) was the least popular, visited by only one team, possibly due to its location at the edge of a recent clear-cut area. Controls 184 (40 points), 175 (50 points) and 139 (20 points) were the "most popular" - with 54, 46 and 46 "hits" respectively. Their locations relatively close to roads/trails and en-route from the start-finish area probably accounted for these choices.

In the 24 Hour event (Figure 2) all controls were found. The “least found” controls - 233 (4) and 124 (5), were both “Distance-Bearing” controls (see below). The least found “regular” control 175 (6) was rather isolated. As in the 8 hour event control 127 was the most popular, visited by 52 teams.

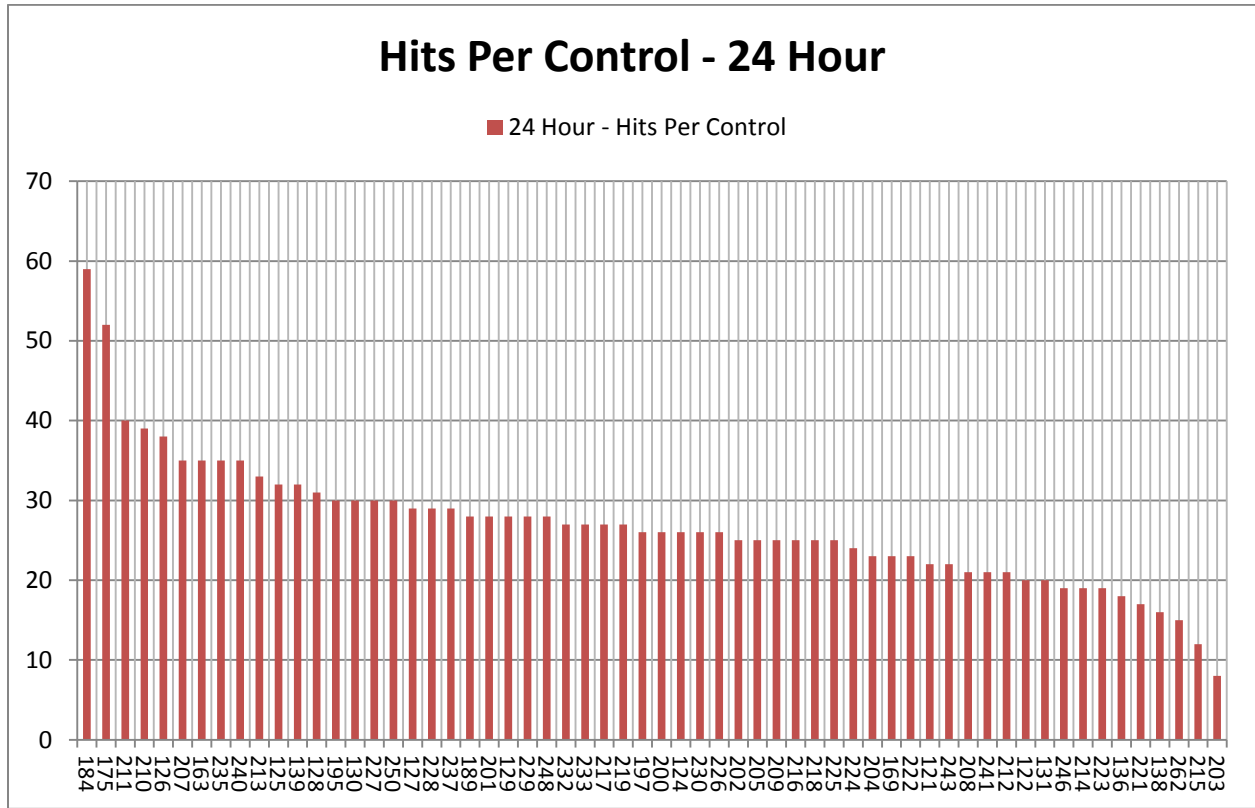
**Figure 1 – Number of Hits per Control (8 hour Event)**



**Number of Hits per Control 24 hour Event**

In the 24 Hour event (Figure 2) all controls were found. Two teams succeeded in finding all 60 controls with the 3<sup>rd</sup> and 4<sup>th</sup> place teams finding 59 and 58 respectively. Given that 3 of these teams finished in the last hour of the event, this result satisfied the course designers that they had set a challenging course for the “elite” competitors. The “least visited” control – 203 - was found by only 8 teams. As in the 8 hour event, controls 184 and 175 were the most visited. As can be seen in figure 2, the distribution of hits per control was remarkably even this year with 41 of the 60 controls receiving between 20 and 30 “hits”, indicating that the different “groupings” of controls were equally popular.

Figure 2 – Number of Hits per Control ( 24 Hour Event)



Number of Points Scored per Control - 8 hour Event

Teams looking to maximise their score need to balance the chance of finding the control with the control’s point value. Table 1 shows the 20 controls yielding the most points for all teams in the 8 hour event. This analysis can also give the course setters an indication of how well the point values were assigned. Control 237, worth 100 points and visited by 24 teams, yielded 2400 points compared to 2160 points for the “most popular” control #184 (40 points for 54 teams). In the 8 hour event route/control choice plays a big part in the success in the competitive teams. The leading team scored 1460 points, visiting 24 controls – an average of 60 points per control. The 2<sup>nd</sup> and 3<sup>rd</sup> placed teams in this category both visited 23 controls, scoring 1090 and 1040 points with “averages” of ~ 47 and 45 points respectively.

**Table 1 – Top 20 Controls Points Scored 8 Hours Event**

CONTROL	HITS	Point Value	Total Points
237	24	100	2400
175	46	50	2300
128	27	80	2160
184	54	40	2160
240	22	90	1980
129	21	90	1890
130	28	60	1680
126	10	140	1400
235	15	90	1350
127	21	60	1260
209	40	30	1200
205	18	60	1080
250	14	70	980
195	16	60	960
139	46	20	920
248	13	70	910
197	17	50	850
200	17	50	850
243	12	70	840
189	16	50	800

**Number of Points Scored per Control – 24 Hour Event**

In the 24 hour event control #126 yielded 5320 points for 38 hits. The 140 points awarded appears to have been a little too generous for this location. The three highest value controls, #122 (150 points), #126 (140) and #124 (130) located on the southern border of the map were in the top 5 for points yielded. Although approx 9-10 km from the start/finish their relative ease of access via forest road and trail attracted the runners. In the same “grouping” (see next section) control #125 (80 points) could be reached by road and trail from the western side of the grouping. Completing the “top 5” in points yielded, controls #235 and #240 (both worth 90 points) could be reached within ~ 500 metres of the forest roads.

**Table 2 - Top 20 Controls Points Scored 24 hour Event**

CONTROL	HITS	Point Value	Total Points
126	38	140	5320
124	26	130	3380
235	35	90	3150
240	35	90	3150
122	20	150	3000
237	29	100	2900
175	52	50	2600
125	32	80	2560
129	28	90	2520
128	31	80	2480
232	27	90	2430
233	27	90	2430
184	59	40	2360
230	26	90	2340
225	25	90	2250
224	24	90	2160
250	30	70	2100
228	29	70	2030
229	28	70	1960
248	28	70	1960

**Analysis by Control Grouping**

Maximising points scored also involves selecting a route to collect control “groupings” within a relatively small geographical area. There were several options available this year with varying “risk-reward” factors.

The two most obvious “groupings” were those located on the two supplementary 1:10,000 scale maps – the Line O and the Distance Bearing exercises.

**Line O Analysis** –Tables 3a and 3b below display the hits per individual control and the total number of controls found by each team attempting the exercise for the 8 and 24 hour event. This year the Line O was located close to the Start area. Surprisingly only 20 teams in the 8 hour event attempted this exercise. In the 24 hour event, 34 of the 65 teams attempted the Line-O. In the 8 hour event only 5 of the 20 teams found all of the controls with controls 219 and 221 being the most elusive. In the 24 hour event of the 12 teams succeeded in finding all 6 controls with a further 5 teams finding 5 out of 6. For the 24 hour event control 221 proved the most elusive.

**Table 3 (a) Hits for Line O Controls 8 hour and 24 Hour**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Line O	216	30	15	25
Line O	217	30	15	27
Line O	218	30	11	25
Line O	219	30	8	27
Line O	221	30	8	17
Line O	222	30	10	23

**Table 3 (b) Line O Number of Controls Found by Team 8 and 24 hour**

	LINE O NUMBER OF CONTROLS FOUND					
	ONE	TWO	THREE	FOUR	FIVE	SIX
8 HOUR	5	4	1	4	1	5
24 HOUR	6	4	0	2	10	12

**Distance Bearing Analysis** - The Distance Bearing Exercise followed a different format this year. The “Start Control” was indicated on the supplementary 1:10,000 map. The distance/bearing locations of all 5 of the controls was given at the start control. The decision on how to approach each control determined how efficiently the exercise could be completed. Control # 207, the only other control located within the area of the supplementary map (and close to the “Start Control”,) has been included in this grouping on the assumption that all teams who attempted the DB would attempt to find #207 (but not necessarily vice-versa). From Tables 4a and 4b below, in the 8 hour event, 14 teams attempted the exercise with 8 teams finding all 5 of the controls. In the 24 hour event 30 teams found at least one of the DB controls with 17 teams successfully finding all five of the controls. Control 241 was the most elusive in the 8 hour event while 246 was the least found in the 24 hour event.

**Table 4 (a) Hits for Distance Bearing Exercise 8 Hr & 24 Hr**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Regular Control	207	50	14	35
Distance Bearing	241	70	10	21
Distance Bearing	243	70	12	22
Distance Bearing	246	70	11	19
Distance Bearing	248	70	13	28
Distance Bearing	250	70	14	30

**Table 4 (b) Distance Bearing Exercise Number of Controls Found by Team 8 Hr & 24 Hr**

	DISTANCE BEARING NUMBER OF CONTROLS				
	ONE	TWO	THREE	FOUR	FIVE
8 HOUR	0	1	2	3	8
24 HOUR	1	6	2	4	17

The third “non-standard” control exercise was identifying controls from a grid-reference. This entails plotting the control on the map, usually done before the start of the event. With the exception of control #163, located relatively close to the Start/Finish, the Grid Reference Controls were not that popular.

**Table 5 Hits for the Grid Reference Controls 8 Hr and 24 Hr**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Grid Ref	131	40	11	20
Grid Ref	138	30	9	16
Grid Ref	163	30	20	35
Grid Ref	262	40	7	15

The remaining groups were classified by geographical location (e.g. vicinity of a geographical feature or area of the map) except for the final grouping (Table 12) which was classified as controls likely picked up en-route to start/finish. For the 8 hour event, proximity of the grouping to the start/finish would obviously be a factor in grouping choice though 10 teams considered it worth the effort to make the 8-9 km trek to pick up control #126 worth 140 points on the southern edge of the map while only 4 of those teams considered it worthwhile or had time to pick up the 3 other high value controls in this grouping. In the 24 hour event there was a remarkably even distribution of teams through these geographical groupings. Ironically, control #215 located 300m from the Start, was only visited by 7 teams in the 8 hour event and 12 teams in the 24 hour event. The 10 point value was not sufficient incentive for the fresh minds and legs at the beginning of the event or the tired ones at the end!

**Table 6 Hits for Controls in the vicinity of Clump Lake**

GROUPING	Contol	Value	Hits 8 Hr	Hits 24 Hr
Clump Lake	189	50	16	28
Clump Lake	195	60	16	30
Clump Lake	197	50	17	26
Clump Lake	200	50	17	26
Clump Lake	201	40	16	28
Clump Lake	202	40	9	25
Clump Lake	203	50	3	8
Clump Lake	204	60	12	23
Clump Lake	205	60	18	25

**Table 7 Hits for Controls in the vicinity of Griswold Lake**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Griswold Lake	127	60	21	29
Griswold Lake	128	80	27	31
Griswold Lake	129	90	21	28
Griswold Lake	130	60	28	30
Griswold Lake	235	90	15	35
Griswold Lake	237	100	24	29
Griswold Lake	240	90	22	35

**Table 8 Hits for Controls in the vicinity of Innis Meadow**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Innis Meadow	136	70	7	18
Innis Meadow	210	50	15	39
Innis Meadow	211	30	20	40
Innis Meadow	212	60	13	21
Innis Meadow	213	30	14	33
Innis Meadow	214	60	8	19



**Table 9 Hits for Controls in the vicinity of Knowlan Lake**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Knowlan Lake	227	60	7	30
Knowlan Lake	228	70	8	29
Knowlan Lake	229	70	4	28
Knowlan Lake	230	90	5	26
Knowlan Lake	232	90	5	27
Knowlan Lake	233	90	4	27

**Table 10 Hits for Controls in the vicinity of Otter Lake**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Otter Lake	223	20	6	19
Otter Lake	224	90	6	24
Otter Lake	225	90	6	25
Otter Lake	226	60	7	26

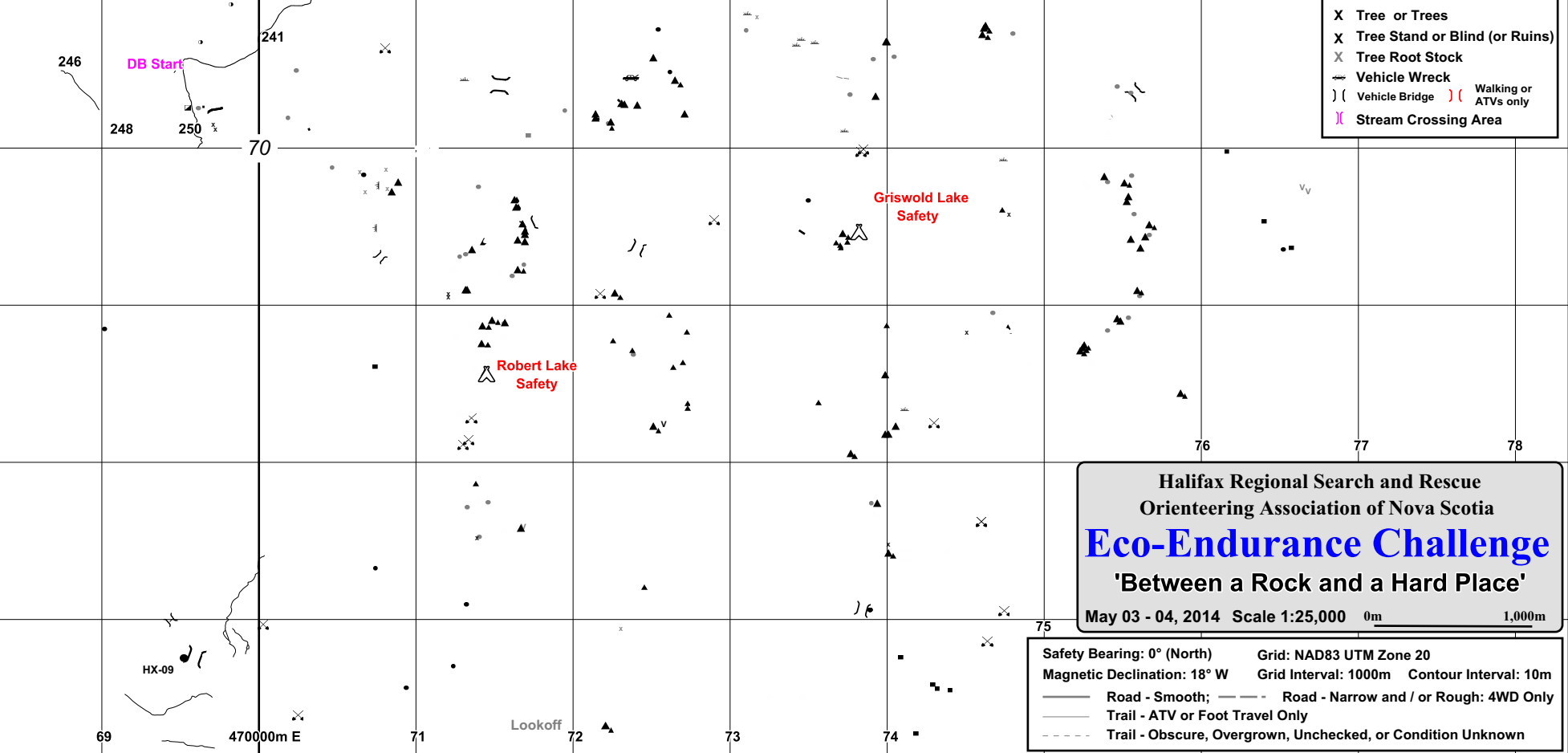
**Table 11 Hits for Controls in the vicinity of Southern Edge of Map**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
South Edge	121	40	1	22
South Edge	122	150	4	20
South Edge	124	130	4	26
South Edge	125	80	4	32
South Edge	126	140	10	38

**Table 12 Hits for Controls En Route to Start/Finish**

GROUPING	Control	Value	Hits 8 Hr	Hits 24 Hr
Start/Finish	139	20	46	32
Start/Finish	169	10	23	23
Start/Finish	175	50	46	52
Start/Finish	184	40	54	59
Start/Finish	208	20	15	21
Start/Finish	209	30	40	25
Start/Finsh	215	10	7	12

Peter Lewis,  
 Orienteering Nova Scotia E2C Committee Representative



- X Tree or Trees
- X Tree Stand or Blind (or Ruins)
- X Tree Root Stock
- Vehicle Wreck
- ) ( Vehicle Bridge ) ( Walking or ATVs only
- ( Stream Crossing Area

Halifax Regional Search and Rescue  
 Orienteering Association of Nova Scotia  
**Eco-Endurance Challenge**  
 'Between a Rock and a Hard Place'  
 May 03 - 04, 2014 Scale 1:25,000 0m 1,000m

Safety Bearing: 0° (North)      Grid: NAD83 UTM Zone 20  
 Magnetic Declination: 18° W      Grid Interval: 1000m      Contour Interval: 10m  
 ——— Road - Smooth;      - - - Road - Narrow and / or Rough: 4WD Only  
 ——— Trail - ATV or Foot Travel Only  
 - - - - - Trail - Obscure, Overgrown, Unchecked, or Condition Unknown