



BIATHLON ONTARIO

ECOAIMS HOSTING GUIDE - 2025-2026

Hosting Guide for the Use of Ecoaims Rifles at Biathlon Ontario Events

Introduction: The Ecoaims Biathlon Rifle system provides a modern, optical-based alternative to the traditional air rifle in biathlon competitions. This guide outlines the procedures, settings, and best practices for hosting a Biathlon Ontario (BiON) sanctioned race event featuring the Ecoaims Biathlon Rifle.

This guide assumes that all Ecoaims rifles are shared amongst all competing athletes.

Ecoaim rifles require additional considerations.

Therefore, these BiON guidelines must be adhered to and are intended to ensure that athletes have a fair, consistent, and safe experience while accommodating the specialized equipment used in these events for all BiON sanctioned events.

Intent: The Ecoaims rifle introduces an exciting opportunity to expand the reach of biathlon in Ontario by enabling participation without the need for a certified range. This innovation supports increased involvement from a broader range of athletes, including youth, para athletes, and adults. As this new element is integrated into events, it is important to uphold the core Mission, Vision, and Values of BiON. While the Ecoaims system opens new doors, it is still essential to ensure consistency and fairness across all participants. As with any new addition, some learning and adjustment may be required—organizers, officials, and participants are encouraged to approach this transition with both clarity and patience.

Race Day Setup & Information:

1. Pre-Race Preparation:

- **Charging:** All rifles, targets, and displays must be fully charged prior to the event. This ensures that all equipment is ready for use throughout the duration of the race.
 - i. NOTE: One full set of Rifle, Display and Target each have discrete unique charging ports. One full set requires at least three plugs. Therefore, the club must plan for a sufficient quantity of power bars / plugs / extension cords for given number of rifles
- **Rest/shooting Block:** Host club must provide shooting rest/shooting blocks for all Ecoaims Rifles.
- **Rifle Serial Number and Display Serial Number Matching:** Each rifle's serial number must be clearly placed with its matching display serial number in the designated shooting lane. (Note: Any target can be used for all rifles.)



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- 2. Zeroing the Rifles:** It is mandatory that the hosting club assign a single designated coach or senior skilled shooting athlete be assigned to zero all rifles for shooting consistency. This ensures that each rifle is zeroed accurately, contributing to fairness for all athletes.

Sufficient time must be allocated for this zeroing process prior to the start of athlete zeroing.

- **Athlete Confirmation** shall be provided in place of zeroing and is intended for athletes to practice and confirm their rifles prior to the race, without making any sight adjustments. The term ‘Athlete Confirmation’ should be used in all program schedules and publications, and general reference for Ecoaims events to reinforce the concept that rifles have been pre-zeroed by a designated, skilled senior individual and no further adjustments are permitted by athlete.
- In the event the coach believes the zero is not adequate for a given rifle/lane, the coach shall confer with the designated senior range official who will provide direction to the club assigned designated zero individual. The coach or athlete shall not zero or make adjustments.

3. Rifle

- **Butt Plate and Cheek Piece Adjustment:** The organizing committee should consider a standardized setting for the butt plate and cheek piece adjustments to ensure athlete consistency.
 - i. **Alternatively**, the organizing committee may provide a selection of rifles configured to accommodate different athlete sizes and preferences. This can range from smaller setups (with the cheek piece lowered and butt plate fully inserted) to larger setups (with the cheek piece raised and butt plate extended). Rifles can be arranged on the range in sequence—for example, Small configurations in lanes 1–5 and Large configurations in lanes 6–10.
- **NOTE:** The rifle will automatically power off after 20 minutes of inactivity. A built-in LED power indicator located on the side of the barrel allows for quick visual verification of the power status. This is especially important during the period between rifle zeroing/confirmation and the start of the race. It is recommended that a designated individual(s) be assigned to check and, if necessary, power cycle each rifle before the first shooter arrives on the range.

4. Display Set up:

- **During Athlete Confirmation** (zeroing), the display shall be visible to the athlete and coaches to emulate scoping and shooting on paper.
- **During competition**, the display shall be turned face down and not be referenced by the athlete or coach during the race. Given the sharing of all rifles during the race, specific site adjustments shall not be performed for an athlete or on a specific rifle.



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- i. In the event the coach believes the zero is not adequate for a given rifle/lane. The coach shall confer with the designate senior range official who will provide direction to the club assigned designated zero individual. Coach or athlete shall not zero or make adjustments.

5. Target Reset and Range Recorder NOTE:

- **Target Reset:**

- i. The targets will reset automatically when the athlete 'loads' the rifle. Once reset, four red targets will be displayed, with the black target being the one to shoot at.

- **Misses and Hits:**

- i. **Miss:** A miss will be recorded as a red target.
- ii. **Hit:** A hit will be recorded as a green target.

- **Range Recorder NOTE:**

- i. Range recorders shall be responsible for recording all red misses (missed shots).
- ii. Range recorders should be aware that the targets will reset either after a predetermined period of time or when the next athlete activates the rifle by performing a reload action.

6. Optical Lens:

The rifle's optical lens (located at the end of the rifle barrel) must be kept clear of any obstructions, such as snow or debris or the rifle rest. If the lens is obstructed, the rifle will shoot but record a ZERO hit. It is recommended that a cloth or wipe be available on the range for clearing the lens to ensure proper functionality.

- Range officials and volunteers will continuously monitor and inspect rifles to ensure clear optical sensors.
- If an athlete obstructs the rifle's optical sensor during their shooting bout, regardless of the cause (e.g., snow), the target's recorded score will stand and cannot be challenged during results review.

7. Special Considerations:

- **Colour Blindness:** Hosting clubs will consult with team lead coaches regarding any athletes with color vision deficiency. Audio hit confirmation shall be used to



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support 'miss' confirmation and penalty loop accuracy. Clubs may also assign a senior range official to provide 'miss' confirmation upon athlete request

BiON Ecoaims Categories and Settings:

- **U11 Ecoaims**
 - **Shooting Position:** Prone from a rest
 - **Hit Limit:** 3
 - **Target Distance:** 10m
 - **Shooting order:** R-L
 - **Audio/Sound:** The rifle's audio should be activated, as it helps athletes confirm that a shot has been taken and is registered. This setting is in **GENERAL SETTINGS**
- **U13 Ecoaims**
 - **Shooting Position:** Prone from a rest
 - **Hit Limit:** 3 or 4
 - **Target Distance:** 10m
 - **Shooting order:** R-L
 - **Audio/Sound:** The rifle's audio should be activated, as it helps athletes confirm that a shot has been taken and is registered. This setting is in **GENERAL SETTINGS**
- **U15 Ecoaims**
 - **Shooting Position:** Prone from a rest
 - **Hit Limit:** 7
 - **Target Distance:** 10m
 - **Shooting order:** R-L
 - **Audio/Sound:** The rifle's audio should be activated, as it helps athletes confirm that a shot has been taken and is registered. This setting is in **GENERAL SETTINGS**
- **Open Ecoaims**
 - **Shooting Position:** Prone from a rest
 - **Hit Limit:** 7
 - **Target Distance:** 10m
 - **Shooting order:** R-L
 - **Audio/Sound:** The rifle's audio should be activated, as it helps athletes confirm that a shot has been taken and is registered. This setting is in **GENERAL SETTINGS**

Other category considerations for other age should be considered to accommodate increase in participation or interest in a given age category including adult, masters, and other Para Biathlon.

BiON is committed to increasing Para Biathlete participation and requests that consideration,



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promotion, and appropriate accommodations be provided to support the involvement of interested Para Biathletes in BiON events.

Categories and participant numbers should be reviewed during the event 'coaches' meeting'. Adjustments could be considered based on the number of participant registrants in a given category, with the goal of ensuring a fair, competitive, and enjoyable experience for all athletes. See note below in Category Considerations.

Senior Official

A Senior Official will supervise the Ecoaim range to ensure fair play and a positive atmosphere, without interfering with other competitors. This official will verify target sizes, zeroing from the assigned individual, and general conditions of this guide are adhered to.

Shared Rifles & Equipment Problems

If a shared rifle is in use or unavailable due to a previous user's technical problems, coaches can request a time extension from officials due to equipment malfunction.

Penalty Loop, Penalty Time

Each event organizing committee shall choose Penalty Loop or Penalty time that is suited for their event while considering schedule, course, number of athletes, volunteers, etc...

Host Event Coordinators' Responsibilities:

- **Event Preparation and Setup:**
 - Host event coordinators are required to ensure that all rifles, targets, and displays are properly charged, calibrated, and zeroed before the start of the race. They should also make every reasonable effort to provide sufficient time for the zeroing process by a coach or senior qualified athlete and ensure that the rifles are consistent for all athletes.
- **Consistency and Fairness:**
 - The rifle settings, including the target difficulty and volume, should be appropriately configured for the race categories. Event coordinators should ensure adequate time, experienced coaches or volunteers are available so that all athletes have consistent rifle setting, zero, and shooting experience during the race.
- **Athlete Safety and Equipment Maintenance:**
 - The organizing committee should consider the proper maintenance and inspection of all rifles and targets and cables and chargers. They should also provide adequate area for storing and charging the Ecoaims rifles and keep spare tools and equipment, such as those for clearing optical lenses, and adjustment tools on hand



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in case of malfunction. This ensures that the race runs smoothly without unnecessary delays. The EcoAims equipment storage should be in a warm or heated area if at all possible to increase battery life.

Category Considerations: Recreational vs. Competitive

- BiON recommends that the majority of youth categories remain recreational, with recognition focused on a broad range of achievements beyond traditional podium placements. Celebrating clean shooting, sportsmanship, effort, and perseverance helps foster a supportive and inclusive environment that aligns with BiON's values.
- Event organizers are also encouraged to consider the number of categories in relation to expected or registered participants. To promote a strong team atmosphere and encourage meaningful competition, categories with only one or very few athletes should be avoided where possible.
- As participation grows, there may be an opportunity to introduce a competitive class for older Ecoaims athletes (e.g., **U15 hit limit 8**), offering a clear progression pathway toward .22 calibre biathlon while maintaining the welcoming spirit of BiON events.

Conclusion: By following these guidelines and requirements, event organizers will help maintain fairness, consistency, and safety for all participants in BiON sanctioned Ontario Cup (O-Cup) races and events (time trials, biathlon bonanza, regional non O-Cup events) that utilize the Ecoaims Biathlon Rifle system. All event coordinators and volunteers should ensure they are familiar with these procedures before race day events to facilitate a smooth and successful event.