

# gaelic woodland project

• PEOPLE-POWERED REFORESTATION •

## Harvesting Firewood from Cherry Laurel

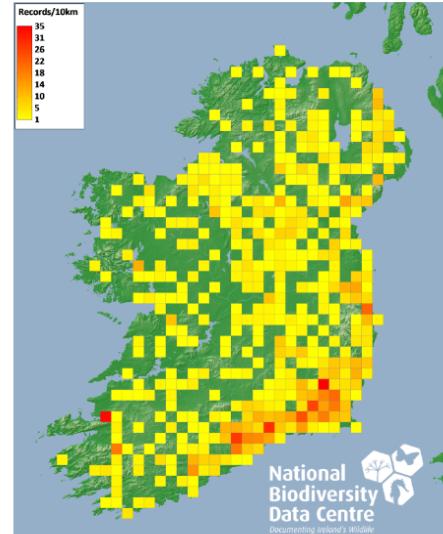
### Statement:

Cherry laurel (*Prunus laurocerasus*) is an “**extremely invasive**” shrub (Maguire, 2018). Yet, due to its omission from the Third Schedule of invasive species in the Habitats Directive, it is propagated in Ireland and commonly sold as hedging. This exemption **permits the cultivation of over 100ha of cherry laurel farms in Munster for the European bouquet market.**

The growth of this Eurasian shrub, native to Turkey and Iran, is regulated by climate; it acquires unnatural growth in temperate climates and rich Irish soil. Megafauna avoid grazing as its leaves are toxic, containing 1-2.5% cyanogenic glycosides (EMEA, 2020). Undisturbed, the cherry laurel canopy casts an evergreen shadow that eradicates the herbaceous layer and prevents ecological succession of flora, including new trees. Isolated removal efforts have proven insufficient to prevent the spread of infestation.

Utilising principles from the circular economy, this document outlines a mostly non-mechanised approach to converting this ecological pressure into an energy resource. Freshly cut, *Prunus laurocerasus* contains 42% moisture and 51% carbon. It burns exceptionally well once dried below 20% moisture content due to its high calorific content; they weave as they grow, providing significant biomass potential in a small area. Branches are often found between 6” and 12” diameter but can grow to ~32”. **Despite growing to an unnatural size in Ireland, this plant is a shrub and does not require a felling license for removal.**

This methodology was tested in the Killyon Manor (SAC) and Hamwood Estate (Long Established Woodland) in Meath: 28 tonnes of biomass (live-weight) was harvested from a 0.8 acre infestation. We encourage landowners, community groups and local enterprise to harvest biofuel from their local cherry laurel infestations.



National Biodiversity Data Centre: Scale of cherry laurel infestation (2023).

## 1.0 Introduction to Invasive Species Removal

High-risk injuries and personal protective equipment (PPE) are outlined and essential for respective removal steps: **High-risk injuries include** head trauma (falling branches), hand saw injury, and eye poking.

Permission should be sought from the landowner before removal work. We welcome you to join a *meitheal* (volunteer day) with the Gaelic Woodland Project to learn the methodology first-hand. We recommend that removal teams not exceed 20 persons.

Our **methodology is broken into Four Steps** which incur different tool requirements and associated risks. The first step, Sweep and Pull, is accessible for most individuals and inclusive to all ages.

The primary tool for removal (Step 2) is the Samurai Saw (silky saw) with a belt holster, which allows for alternation between sawing and carrying wood. It is paramount that volunteers wear quality gloves as saw injury is high-risk. Safety glasses are also necessary as eye poking while moving biomass is common.

The Nordic Chain Saw is a two-person powered chainsaw, for cutting larger limbs and branches (Step 3), which avoids mechanical chainsaw licensing: it is paramount that volunteers wear a helmet as injury associated with falling branches is high-risk. ‘Landing Zone’ (LZ) is where cut laurel falls- it’s imperative that the LZ is known and kept clear: always follow the length of a laurel limb before cutting.

Estimated equipment costs	
Safety Helmet	€34
Safety Gloves	€12
Safety Glasses	€12
Nordic Chainsaw	€50
Samurai Saw	€44
<b>Total Meitheal Kit:</b>	<b>€152</b>

## 1.1 Harvesting Biofuel:

It's important to ensure the flora being removed is Cherry Laurel and NOT a native plant: existing native flora is essential for natural regeneration so must be preserved. To begin harvesting, create two 'processing streams':

- **Brash:** For young shrubs and smaller branches. This stream can be designed as *Brush Pile Habitat* for birds and small mammals: the base of the brush pile should have two raised supports (eg. logs) to allow easy access for animals. Ensure the brash is not too large; cut it into smaller pieces when piling if required. Piling brash is necessary as cherry laurel can re-root if left on the forest floor and piles reduce surface contact. Note: they will shrink considerably as they begin to decompose.
- **Firewood:** Removing an infestation can be done by hand; generating fire-loggable pieces from biomass may require mechanised support. We recommend stacking the fire-loggable limbs and branches in one area for chainsawing into logs (~6-8" long) when the removal is completed. Once cut, these logs can be stacked and covered for drying and collection later: covered from rain, raised off the floor, and aerated for the quickest results. Drying is necessary before burning.

## 2.0 Removal processes:

**Manual handling:** Always be mindful when working and ensure correct posture. Do not bend your back when lifting, and do not overreach. Improper positioning will strain the back and neck, which can result in a muscle spasm. If an object appears too heavy or large, seek assistance from another volunteer.

### Step 1: Sweep and Pull

The first stage is easy, requiring only **goggles and gloves**; it's inclusive to all ages and the preferred removal approach as removing roots will prevent regrowth. Young Cherry Laurel shoots have shallow roots and can be removed by hand. The first step involves sweeping an area and pulling out the smallest shrubs by hand; this also improves visibility. **Only commence Step 2 when Sweep and Pull is completed.**

### Step 2: Middle Shrubs

This is for lateral branches below head height. Save all horizontal branches for Step 3.

1. Approach the shrub; keep feet on the ground; observe the entire branch before cutting. Laurel grows erratically; you must ensure that no one, including yourself, is in the Landing Zone. And never cut over your head (risk of sawdust in eyes and head trauma).

2. When removing, keep the crown intact and carry it to the brush pile for further break-up: this keeps the forest floor clear of woody debris.
3. Saw/prune branches from the bottom up: this removes impediments that could cause higher branches to become suspended when they're cut: suspended branches are priority high-risk and should be removed ASAP.

**Only commence Step 3 when Steps 1 & 2 are complete.**

### **Step 3: High Shrubs**

For shrubs with horizontal limbs supporting foliage above head height. Note: remove all smaller shrubs with Step 2 before Step 3 as a cleared Landing Zone is essential for the visibility necessary to prevent injury.

1. Cutting a horizontal limb should be a spectacle. Ensure all other nearby work ceases.
2. Determine the Landing Zone and utilise ropes to direct the falling limb into the LZ if necessary: ensure the rope is long enough and that all pullers are outside the LZ.
3. Two-person *Nordic ChainSaws* can cut diagonally or in a wedge formation, to direct fall into desired LZ.
4. Once the horizontal limb is on the floor, a concerted effort should be made to process biomass into brash and firewood and the LZ totally cleared before progressing onto another horizontal limb.
  - a. Note: Continuously remove trip hazards from the forest floor.

### **Step 4: Stump Removal**

Conventional removal methodologies rely on herbicides to prevent regrowth; these chemicals are indiscriminate terminators of life and may leave residue in the soil that impacts invertebrate, bacterial and fungal communities. Physical stump removal is a labour-intensive process, however, the holes left can be used to support the planting of native species to assist in native regeneration.

#### **2.1 Day Schedule Template**

**9am** Organisers arrive to prepare equipment and establish HeadQuarters (HQ) near the Training Area (new volunteers) and Removal Site (experienced volunteers). The HQ may constitute a tarp to keep personal items dry and provide shelter in the event of rain. HQ should include a First Aid Kit.

- Before volunteers arrive, assign roles for the day (hi-visibility jackets & walkie-talkies):
- Meitheal Head: Event lead for overall coordination.
- Training Officer: Lead and train new volunteers.
- Safety Officers: Observe and support experienced volunteers.

**10am** Volunteers arrive; take details (emergency contact/insurance). Confirm the list of volunteers before commencing work. Once assembled, take volunteers to HQ for safety induction (Meitheal Head), then divide into two groups:

- New volunteers taken to the Training Area with the **Training Officer**.
- Experienced volunteers taken to the Removal Site with **Safety Officers**.

**11:00am** Begin the meitheal. Focusing on Steps 1 and 2.

**1:30pm** Come together for lunch.

**2:30pm** Entire meitheal works together, with new volunteers focusing on building brush piles and supporting experienced volunteers. Incorporate Step 3 if appropriate.

**Closing:** Meitheal Head must record any injuries and observations and collect equipment.

### **3.0 ROLES, BEHAVIOUR, AND QUALITY OF WORK**

1. All participants must wear GLOVES, HELMET and GOGGLES during activities. Failure to do so may result in volunteers being asked to stop.
2. Careless workmanship and horseplay can be dangerous and may result in volunteers being asked to stop.
3. Possession, consumption, intoxication or being in an unfit state caused by alcohol or illicit substances is prohibited during active meitheal.
4. Actions will be taken against volunteers who deliberately disregard health and safety procedures.
5. **Very Important:** Fatigue later in the day increases the likelihood of accidents.
6. **Volunteers must adhere to appropriate steps (Section 2.0):**
  - a. New volunteers steps 1-2, with the Training Officer.
  - b. Experienced volunteers steps 3-4, with the Safety Officers.

#### **3.1 New Volunteers**

1. Take reasonable care of your own safety, health and welfare and that of any other person(s) that may be affected by your acts or omissions.
2. Familiarise yourself with and always conform to the methodology (Section 2.0) and safety policies detailed in this Safety Statement; communicate with **Safety and Training Officers** if unsure.
3. Observe all safety rules and conform to all instructions from organisers (Meitheal Head, Training & Safety Officers).
4. Only use the correct tools and equipment as they are intended and keep tools in good condition.

5. Report all accidents, near miss, risks and damage to organisers (**hi-visibility jacket**) without delay.
6. Persons must not Intentionally or recklessly interfere with or by misusing any appliance, protective clothing, equipment or other means and protections provided to secure the safety, health and welfare of persons arising from work activities. They must not carry out any tasks they feel they are not competent or involve unreasonably high risks.
7. New volunteers will engage in Step 1 at the beginning of the day, but may assist in Step 2 with approval from the **Training Officer**.

### **3.2 Experienced Volunteers**

1. Observe the effectiveness of the methodology and recommend modification as needed.
2. Support new volunteers, demonstrating best practice for removal and safety.
3. Make arrangements to maintain a tidy workplace to limit the risk of slip, trip and fall, or being trapped by obstacles, brash is piled effectively, and timber is moved to the holding area.
4. Ensure access and egress routes (i.e. walkways and doorways) are clear and free of obstruction and trip hazards.
5. Enforce the wearing of personal protective equipment as necessary.
6. Relay information pertinent to the well-being of volunteers to the **Safety Officers**. This includes
  - a. Aerial observations (e.g. suspended branches).
  - b. Well-being and energy levels of volunteers.
7. Welcome to engage in Steps 1 and 2. Do not commence Steps 3 or 4 without consulting **Safety Officers**.

### **3.3 Meitheal Head, Safety Officers and Training Officer**

1. Organisers must have a full understanding of and ensure adherence to this methodology.
2. Ensure that volunteers wear safety equipment (PPE): including helmets, gloves and goggles.
3. Make safety a priority and show a good example using all recommended safety equipment.
4. Make all health and safety provisions, including rest times, and first aid stations.
5. Ensure mutual respect amongst the volunteers and that the focus remains on removing Cherry Laurel.
6. During a meitheal:
  - a. **Meitheal Head** is responsible for identifying hazards not explicitly laid out in this safety statement (e.g. large laurel that must not be cut) and to communicate

these hazards with Training and Safety Officers. They are to perform a site assessment and determine Training Area and Removal Site prior to activities. They are responsible for implementing any and all practicable safety controls which will allow for volunteers to conduct the meitheal safely. They are also responsible for PPE and tools, and general coordination of removal activities.

- b. **Training Officer** is responsible for training new volunteers to ensure a high safety standard is maintained from the bottom up. New volunteers can not engage in Step 2 without approval from the Training Officer.
- c. **Safety Officer** is responsible for the experienced volunteers. Assist in removal, coordination of any Step 3 activities, and communicating any concerns to the Meitheal Head.

## 4.0 RESOURCES

### PERSONAL PROTECTIVE EQUIPMENT

1. Helmets, gloves and eye protection are recommended for all volunteers. This equipment must be assessed by Meitheal Head and any defects reported prior to work.
2. **All volunteers must wear protective gloves** when equipped with a saw.
3. All volunteers wear protective glasses during active removal.
4. It is recommended that all volunteers wear a safety helmet during active removal.
5. All persons working or visiting on-site must wear closed safety shoes at all times; preferably steel toe shoes.
6. First Aid Kit is essential.

### RECOMMENDED TOOLS

1. The **Samurai Saw** (silky saw) is the primary tool for laurel removal.
  - a. All volunteers must have a belt for the saw's holster. This must be used when not actively sawing.
  - b. Do not multitask with Samurai Saw in hand.
  - c. Do not handle Samurai Saw without protective gloves.
  - d. Only use Samurai Saw as intended, in a sawing motion.
2. **Nordic Pocket Saw** is used for thicker branches.
  - a. Only to be used during Step 3.
3. **Pruners** (optional) are effective for breaking up branches at the brash pile.
  - a. If you can not cut through a branch, it is too thick; move to a smaller section.
4. **Shovels, axes and Root Assassin** (serrated shovel) used to cut roots beneath the soil during stump removal.

## **ACCIDENT INJURY EVENT**

When a serious accident occurs the Foreman on-site or another nominated person must take charge of the situation and proceedings. They should perform the following actions and procedures:

- (1) Observe the accident location and status of the injured person: and perform first aid if required. This individual should have an up-to-date certificate in first aid training.
- (2) Ensure that their own safety is taken into account. No actions that may jeopardise themselves or any other individual's safety should be taken.
- (3) If there is a risk of further injury to the affected individual, attempt to move the injured person to safety, otherwise do not move.
- (4) Instruct another individual to call for immediate medical assistance or emergency service if required.
- (5) If emergency services are summoned, ensure they are given the exact location and ensure they can access the site as near as possible to the injured person.
- (6) Appoint a suitable person to travel with the injured person and establish the location of the hospital.
- (7) Notify the injured person's family and, if required, arrange for them to be transported to the hospital.
- (8) Obtain statements from all witnesses, write them down as they are given and get signatures and a date.

## **FIRST AID**

Arrangements will be made by Meitheal Headso that there is a stocked first aid kit and a trained first aid person at all times.

## **HARASSMENT AND DISCRIMINATION**

1. The Gaelic Woodland Project aims to create a work environment free from harassment, discrimination, bullying or disrespectful behaviour.
2. Any forms of harassment, discrimination, bullying or disrespectful behaviours will not be tolerated or accepted as part of our meitheal culture.

## **HAZARD IDENTIFICATION**

The following are general guidelines and protocols implemented in mitigating risks found in recognized hazards of the removal Cherry Laurel for the Gaelic Woodland Project site.

1. Work Area access and Egress
  - a. All entry and exit points will be clear of obstruction.
  - b. A designated walkway will be available that leads to the exits, will be stable and clear of obstruction.
  - c. Operations will only commence when there is adequate natural lighting; no work will occur before sunrise or after sunset.
  - d. Good housekeeping practices will be undertaken which includes:
    - i. Keeping the work area clear and storing materials safely
    - ii. Clearing up and correctly disposing of waste materials as they are being produced
    - iii. Keeping materials, items and tools in their correct and allocated location until required.
    - iv. Ensuring flammable or dangerous substances are not found on site.
    - v. Appropriate arrangements will be made for the collecting and/or disposing of waste.
2. Tools and Equipment
  - a. All equipment required for performing the work will be provided by and/or through the Meitheal Organiser.

- b. All equipment will be approved by the Organizer for fit and function in relation to the removal of Cherry Laurel.
- c. Any equipment required by law to be certified and/or periodically inspected by a trained or competent individual will be done so prior to being issued to volunteers.
- d. Volunteers must not attempt to use tools or equipment for which they have not received training in the correct and safe use of.
- e. Volunteers are prohibited from attempting to use a tool or equipment in a manner of which the manufacturer did not design it for.
- f. Personnel are prohibited from altering or removing guards from the equipment.
- g. Tools and equipment will be inspected regularly and prior to its use for fit and function.
- h. Any tool or equipment which is suspect of being faulty must be reported to the Organizer upon discovery.

3. Electricity

- a. No electric tools or power may be used in the removal of Cherry Laurel

4. Noise

- a. Tasks have been assessed for level of noise produced and it has been determined that noise levels will not be in proximity of exceeding the daily exposure of 80dB(A) or more; nor past the peak noise of 135dB(C)

5. Site Security

- a. The Organizer will be responsible for ensuring that the site is safe and free of any unwanted or unwelcomed guests or visitors, this includes but is not limited to persons or animals, during Meitheal operations.

6. Weather and Outdoor Operations

- a. The Organizer is responsible for ensuring that the weather conditions do not pose a serious threat to life or health of the volunteers.
  - i. This includes looking at the weather forecast and canceling or postponing any Meitheal operations which would take place in unfavorable and/or risky conditions.
  - ii. They will continuously monitor the local weather conditions and cancel or postpone any Meitheal operations if the conditions become worse and lead to unfavorable and/or risky conditions.
- b. All volunteers will be instructed on the signs and symptoms of heat stress and heat stroke.
- c. All volunteers will be supplied with adequate water and be allowed to take as many breaks as they feel is fit for them in order to reduce their exposure to sun, heat or other weather phenomena.

7. Manual Handling

- a. All volunteers will be instructed on the proper manual handling techniques required to perform the removal of Cherry Laurel.
- b. Meitheal operations will be assessed and designed to minimize the requirement of volunteers to perform manual handling by reducing the size and weight of items needing to be moved.
- c. Appropriate PPE such as gloves designed to aid in manual handling will be provided.
- d. Proper Manual handling Procedures Include:
  - i. Size-up load, check weight and remove or avoid possible hazards (e.g. sharp edges, loose or dangling material, etc.)
  - ii. If object is too heavy, large or awkward for one individual to lift, then incorporating two or more volunteers to aid in the movement of the object is required.
  - iii. Determine route that load will be moved by.
  - iv. Avoid narrow spaces where pinch points may become present (e.g. fingers against trees)
  - v. Position body as so that the individual can be as close to the load as possible
  - vi. Always ensure the heaviest portion of the object is located closest to the core of the body.
  - vii. Position feet so they are approximately the same width of the hips, with one foot slightly in front of the other.
  - viii. Relax and bend knees, position centre of gravity to be as low as comfortably possible.
  - ix. Lower hand and grasp the base of the object.
  - x. Raise head and look forward while keeping the back straight.

- xi. Using power provided by the legs, stand up and lift object up in a slow controlled manner (i.e. no jerking motions).
- xii. If using more than one persons to lift a load, ensure that load is lifted together at the same time and in the same manner.
- xiii. Keep arms, elbows and load close to body.
- xiv. Move lifted object at comfortable pace, never rush.  
When lowering a lifted load, the same principals and steps used for initially lifting the load will be used in reverse order:
- xv. Position feet so they are approximately the same width of the hips, with one foot slightly in front of the other.
- xvi. Ensure load is touching or as close to the body as possible.
- xvii. Relax and bend knees, slowly lowering the load using the power provided by the legs to control the descent, while keeping the head up and looking forward.
- xviii. Ensure fingers will not be crushed or pinched underneath the load when it is set down.
- 8. Working at Height
  - a. The Organizer will ensure that Meitheal operations will not require anyone to work from height.
- 9. Stress
  - a. The Organizer is to monitor all volunteers for stress and will ensure that the Meitheal operations will not cause any undo or unnecessary stress.
  - b. The volunteers will be reminded that they are allowed to take breaks as frequent and as often as they would like.
  - c. The Volunteers will be reminded prior to the start of the Meitheal that their participation is strictly voluntary and they are allowed to leave the Meitheal at any time without providing any reason.

#### **SAFE SYSTEM OF WORK**

1. Prior to the starting a removal day, organisers must agree upon a safe system of work and agree to coordination.
2. All activities will be conducted in a responsible manner and so planned and controlled that the possibility of unplanned events occurring is reduced to a minimum.
3. Health and safety issues and concerns will be reviewed on an ongoing basis.
4. Advice from competent individual will be sought when deemed appropriate.