

English Holly Manual Removal- Year 2

Fillongley Provincial Park

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Overview

On January 26, 27 and 28, 2020, Denman Conservancy Association and DIRA Pesticide Free Committee of Denman Island led a second 'Great Holly Removal Work Bee' following on the volunteer work that had been done in 2018-19 (see 'History' below).

History

In 2017, a Denman Island community member reported to Denman Conservancy Association (DCA) directors that herbicide spray had been applied to English Holly (*Ilex aquifolium*) plants in some areas of Fillongley Park. As a longstanding environmental organization on Denman Island with a vested interest in protecting sensitive ecosystems and ecological communities, DCA (via the Lands Committee) responded to this by carrying out preliminary research on the procedure and product used, and contacting BC Parks with a request for information about this spraying and a request to cease any further herbicide treatments.

Following a series of exchanges by mail and email, on May 30 2018 BC Parks staff met with a group of representatives from DCA as well as Denman Island Residents Association (DIRA) Pesticide Free Committee to discuss the previous herbicide treatment and alternatives to continued spraying of herbicide for Holly control within the Park.

Following this site visit it was agreed that BC Parks would not continue with herbicide treatment in Fillongley Park in 2018. A follow-up letter was sent by DCA to BC Parks in June 2018 (Appendix A). Furthermore, BC Parks agreed to provide up to \$1500 in funds for a Trial Effort to manually remove English Holly plants from a portion of the Park. Coordination for this Trial would be overseen by DCA, under the direction of DCA Director and Invasive Species Coordinator (Luise Hermanutz, Biologist) and Land Manager (Erika Bland).

Beginning in November 2018, in collaboration with the DIRA Pesticide Free Committee, planning commenced for a three-day long volunteer Holly removal 'work-bee', which was subsequently carried out from January 28-30, 2019. Roughly 2300 individual plants were removed over these three days, by 25 volunteers, who contributed a total of 78 hours of volunteer time, in addition to the volunteer hours spent on coordination. Overall, this trail was successful in removing the majority of Holly plants within the Trial Area, and raised awareness in the community about the importance of controlling this invasive species.

January 2020 Work Bee Activities and Results

A total of 29 volunteers came out to our Great English Holly Removal Work Bee of 2020. A total of 78.25 volunteer hours were committed to this effort in 2020 (in addition to 2 DIRA Parks Committee volunteers approved by Parks to safely use chainsaws, Tim Fuchs and Graeme Johnston).

On January 26, 27 and 28, following a safety orientation and sign-in, including filling out the waiver form provided by BC Parks (Appendix B), participants were provided with tools (loppers, secateurs, gloves, eye protection) and directed to proceed with removing Holly plants systematically throughout the three Removal Areas described below. Areas were flagged and the boundaries were verbally explained to participants.

The January 2020 Work Bee began on January 26 with follow-up treatment in the **Year 1 Trial Removal Area** (yellow area in Figure 1) that was cleared of Holly plants in January 2019 (at the west edge of the Beadnell Meadow). Volunteers helped to scour the entire Year 1 Trial Area and remove any new shoots sprouting on previously cut stumps, as well as pull and newly seeded small plants.

After follow-up treatment was completed, two new Removal Areas were chosen for the continued removal of Holly plants: **Year 2 Removal Area 1**) north of the meadow; and **Year 2 Removal Area 2**) south of the meadow. On January 27 and 28, 2020 a team working in Removal Area 1 (the purple area shown in Figure 1) completely cleared all large and small Holly plants, with the exception of a small, dense cluster of plants still needing removal at the top of the steep creek bank. Removal of many large plants, especially any with berries, was initiated by a second team in Removal area 2 (the turquoise area Figure 1), but removal of the many smaller plants in this area still needs completion. Many plants in Area 2 are dispersed through many wet areas in large networks, and many of them are rooted in decaying litter and require excavation rather than cutting only.

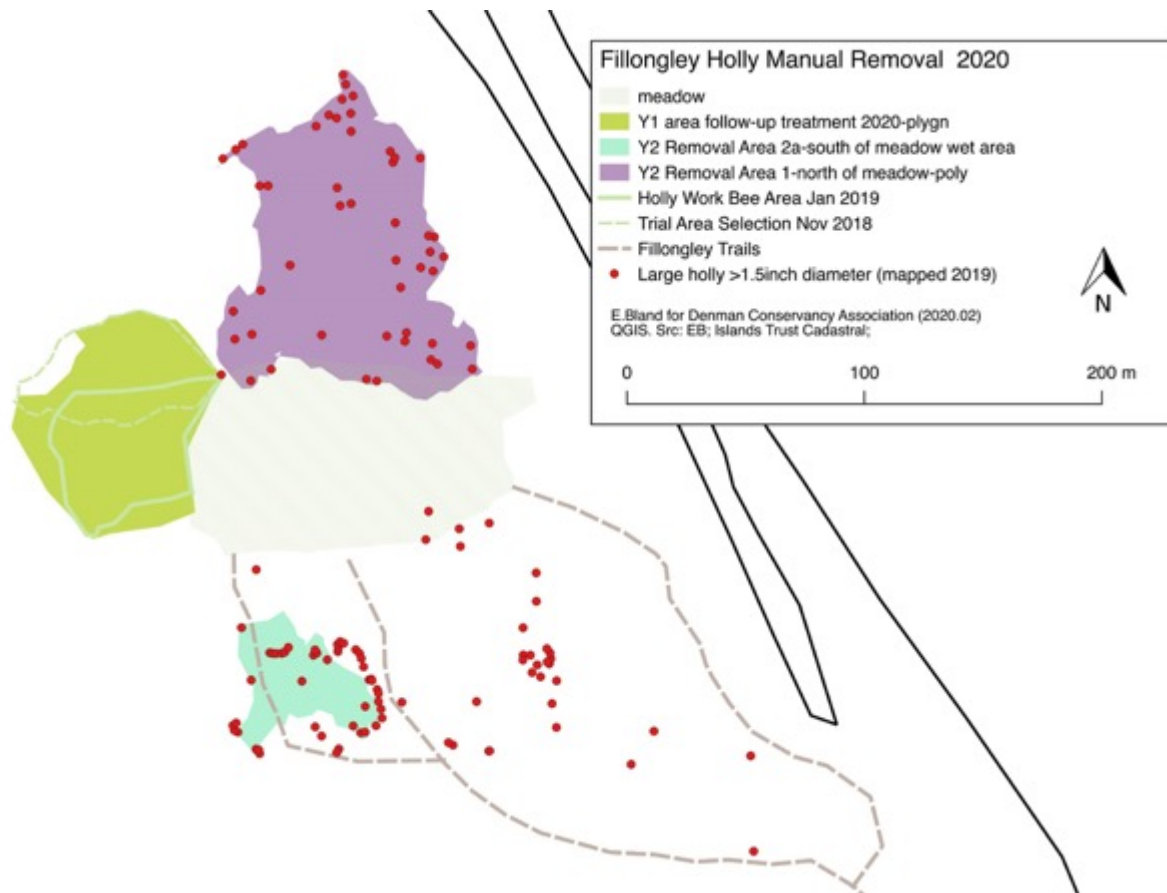


Figure 1. English Holly Manual Removal Areas, Work Bee January 26-28, 2020



Figure 2. English Holly Manual Removal Work Bee Area January 28-30, 2019

Volunteers/participants were asked to take care in walking through the Removal Areas in order to minimize trampling of native vegetation. Particularly, the volunteers were asked to avoid stepping on the sensitive crowns of common shrubs (Oregon grape, Salal and Huckleberry) and ferns. Snowdrops, primulas and other early-blooming species were visible at the northeast edge of the meadow, and extra care was taken when removing holly plants in this area. As was noted in 2019, this is an optimal time of year to remove Holly because disturbances to sensitive forbs and other dormant vegetation was reduced, and plants are easy to spot in the absence of deciduous foliage. Also, plants are easily removed from the moist ground, making it much easier to pull out the entire root system of plants.

In Year 2 Removal Area 2, the Beadnell Trail was used as much as possible as an access route and for removing plants to the meadow. It was not practical to remove all cut/pulled plants to the meadow from Year 2 Removal Area 1, so some plants were broken down and left in dense piles, weighed down by cut stumps to encourage decomposition. This method has proven effective in minimizing the potential for regrowth and re-sprouting of cut branches at other Conservancy manual holly removal sites. The location of piles, spread throughout the work area, was chosen to minimize overall disturbance to understory vegetation in any given area.

If it is determined that leaving the piles in place will have an undesirable impact on native flora, a future work bee could be planned to remove the piles to the meadow or perhaps to another nearby location deemed appropriate in consultation with BC Parks. However, given the apparent rate of decomposition of the plants cut in 2019, it is likely that the piles will rot down in only a few years, and it may not be worth the huge effort it would take to remove the biomass. In addition, keeping the piles at the location where plants have been cut is very helpful for targeting follow-up treatment to remove any new shoots on cut stumps.

Since the work was more spread out this year, since bringing all removed material to the meadow was not feasible, the removal effort was quantified by total biomass in cubic metres (rather than counting of individual plants as was done in 2019), an increasingly common way for measuring invasive species removal efforts. As it is practically impossible to define an ‘individual’ plant, since many plants have multiple shoots connected underground, and also since counting individual plants of varying sizes is difficult to achieve with large groups of volunteers, a calculation of total biomass is recommended as a metric for evaluating outcome against work effort. All piles of removed plants were measured (height, length and width) and the total biomass calculated (see Table 1). At least 40 large Holly ‘trees’ (varying from 2-10 inches trunk diameter) were removed and are included in the total biomass calculation. Some larger trees were removed prior to the January Work bee dates by Tim Fuchs and Graeme Johnston. As work continues in future years, the project team should decide, in consultation with Parks biological staff, which method of quantifying removal is most effective and efficient. Refreshments were provided to volunteers each day of the Work Bee. Photographs are included in Appendix A.

Notable Observations

In areas where herbicide was sprayed, new shoots were growing from previously sprayed trees, and lateral branches on apparently ‘dead’ holly plants were propagating by layering outward and producing new shoots. Roots of previously sprayed, presumed dead trees were producing root suckers connected to the sprayed ‘mother’ plant and growing within the direct vicinity (within 1-2m).

Table 1. English Holly Manual Removal Data 2020

Piles of Holly Removed (Biomass) ID	Size (m)			Cubic m	Notes
	L	W	H		
Beadnell Trail	11.5	3	1.4	48.3	
By test plot	8	2	1	16	big trunks
E of test plot	6	1.5	1	9	
Furthest East	1	1	0.8	0.8	by snowdrops
N of stream, eastern	2	1.5	1.2	3.6	Barry
moving NW	2	2	1	4	big trunk
moving NW 2	1	1	0.5	0.5	small pile
moving NW 3	3	2.5	1.5	11.25	trunks
moving NW 4	2	2	1	4	trunk
moving NW 5	2.5	2.5	1.1	6.875	trunk adjacent; next to creek
upper meadow 1	3	2	1	6	
upper meadow 2	2	2	1	4	
upper meadow 3	1.5	1.5	1.5	3.375	
upper meadow 4	2.5	2	1.2	6	
Turkey tails	6	2.5	1.7	25.5	next to wet area
turkey tails 2	2	2	1.5	6	trunks
wet by wet meadow	2	2	1	4	wet
wet meadow	2	2	1.3	5.2	added 3 small piles
TOTAL	60	35	20.7	164.4	

Outreach and Promotion

DCA and the DIRA Pesticide Free Committee circulated information materials around the Island and online (DCA Facebook page, email, Grapevine and Flagstone publications). DCA promoted the Fillongley Holly Removal project at our 2019 Annual General Meeting, at information tables at the Farmers Market in summer 2019, at the X-mas Craft Fair in December 2019, and at Seedy Saturday in January 2020. A poster advertising the Work Bee was distributed to all households on Denman in January 2020, and dates of the Work Bee were posted on the island's online and print Event Calendars, along with posts on Facebook to two Denman Island Bulletin Board pages throughout the course of the 3 days.



Work Bee Sandwich board



Work Bee Poster/Flyer



Holly Info Flashcards (X-mas fair)

Appendix A. Selected Project Photographs



Hand held up showing previous height of piles from 2019 removal. Piles have reduced to less than half original height over 9 months. Salal and other native vegetation seems to be growing into the piles from the woodland edge. No re-rooting or sprouting was observed at any of the piles.



Sept 2019. Examples of holly re-sprouting from previously cut stumps. Was determined that follow-up treatment of Year 1 Trial Area should be priority for Year 2 Work Bee.



The largest stump cut – 35cm/13 inches



Removing lateral underground runners from a previously sprayed (but not dead) Holly tree



NOTE (see Notable Observations, above): We also found side shoots on sprayed plants of similar size (adult human height) that had re-rooted (propagated by layering) and producing a new plant. Sorry, no photos of this, unfortunately, but we did show Heather Steere of BC Parks



Example of a large holly pile left to compost where not practical to bring to meadow. Dense pile of cut branches weighed down by cut trunk pieces.



Tired volunteers