

Adopt a Home for Wildlife Plant & Invertebrate Key Findings

The project aimed to create a network of sites across Montserrat called Wildlife Homes (WH) managed for wildlife. The sites were representative of habitat types found on the island. One of the aims of the project was to conduct some baseline surveys to understand the plant communities found on these sites, particularly presence of native, introduced and non-native invasive species. Using the information gained through the survey, a management plan was developed with the WH site owners/managers. Some of the management aims included: control of invasive species; encouragement of natural regeneration; and planting of appropriate native species on the sites. Plants, organic fertiliser, and some equipment were provided by the MNT botanic garden, as part of the project. Advice was provided by the Project Officers (including Montserrat National Trust and Ministry of Agriculture, Housing, Lands and Environment staff working in their own time). Follow-up ground surveys were conducted in the final months of the project to document positive changes during the project.

Ground surveys are labour-intensive and require good identification skills. The Project Officers were supported in the first instance by knowledgeable persons on island, but soon developed a great interest in learning these identification skills themselves, supplemented by field guides, other literature and the growth of citizen-science tools such as iNaturalist. At the same time, where possible they shared information with Adopters to raise awareness of species found on their sites and throughout the island. That is not to say that the Project Officers didn't learn from the Adopters. They most certainly did. The amount of plant species recorded as "Unknowns" was significantly less in the follow-up surveys. This is for several reasons. Firstly, more knowledge gained through the project and secondly, additional capacity within the Trust and Ministry to identify plant species. This is expected to increase further with the development of an on-island herbarium through follow-up work.

Montserrat has over a thousand vascular plant species (Wikipedia, 2024). In 2024, the Project Officers made over 1800 observations in the surveys recording 384 plant species on the WH sites. Here we review some of the key findings from each site as well as a brief summary of changes recorded. Throughout, we refer to Table 1 which gives a summary of each site referred to. Additional information can be found on the dedicated project pages here: <https://www.ukotcf.org.uk/key-projects/adoptahomeforwildlife-main/adoptahomeforwildlife-overview/>

A summary of the results are visualised here: [Surveys and Results - UK Overseas Territories Conservation Forum](#)

WH01: Part of Garibaldi Hill, Ventana. We noted an increase in 34 plant species at this site. The site has been managed for over 10 years (since ash fall lessened following relative quiet of the volcano) with the intention of restoring an area of tropical dry forest. The site has managed invasive species through ring barking and other techniques. Tropical dry forest is slow to re-generate. The site owner has demonstrated some experiential techniques which are having positive results, but take time. These are demonstrated in the videos recorded on the site (see <https://www.ukotcf.org.uk/key-projects/adoptahomeforwildlife/>). We note that the percentage of vegetation cover made up of native plant species had increased by 10%



and the number of invasives had decreased by 13%. The baseline insect surveys recorded 200 Herbivores, 373 Detritivores, 317 Pollinators, 8 Predators, 38 Not classed. Results in the follow-up year could not be compared here. Interestingly, the site owner reported that the month of May was an important time of year for pollinators, particularly bees and further studies could be carried out here. This would imply some seasonality in the results of insect surveys undertaken in this area. The site owner also points to a micro-climate in the location which would impact of the wildlife in the area. This is an important habitat on Montserrat and further work to restore areas of forest should be encouraged.

Figure 1 (left): Gumbo limbo or West Indian birch, *Bursera simaruba*, found on WH01.

WH02: Belham River We noted an increase in 31 species at this site. As reported elsewhere this site is particularly important for the pools of brackish water that are present most of the year. This site is highly changeable given its location by the coast and meeting the Belham River (liable to flooding in heavy rains). The changes as a result of the storm in 2023 are documented elsewhere. We note that the percentage of vegetation cover made up of native plant species had decreased by 16% and the number of invasives had decreased by 19%. The results here are mixed, but with the

disruption during the storms is likely to have played a part in the reduction of native and invasive species at this site. The baseline insect surveys recorded 0 Herbivores, 0 Detritivores, 26 Pollinators, 2 Predators, 14 Not classed. Results in the follow-up year could not be compared here. The ponds have been sampled by professional entomologists and have contributed knowledge towards the invertebrate checklist. Interesting finds were freshwater scorpions. Further results are expected once samples have been analysed.



Figure 2 (above): Iguana basking at Belham WH02

WH03: Cork Hill. This site showed early promise to be an area where larger scale restoration on habitat could be achieved. Pre-volcano, the area was populated, with houses with gardens and other buildings. It had a school, a clinic and other services. Surrounding habitats would have typically consisted of tropical dry forest with cultivated areas in and around the settlements. Residents of Cork Hill had to abandon their homes in 1997 due to the volcano. During these 20 years, the area has become heavily vegetated. The area is now dominated by Acacia, wild tamarind and mostly Java plum, *Syzygium cumini*, which was a cultivated garden fruit-tree, but could not be managed for 20 years so that it took over gardens and even houses. Quieting of the volcano in recent years has allowed residents to return to repair some of the damage and some have made a start at clearing some of the invasive vegetation, at the cricket ground, which has been used as a way to bring people back to the area, as well as some gardens. While baseline surveys were carried out and a management plan agreed; it was not possible to make progress on the site during the project timeframe due to external factors. We do not report on the changes to the site here.

WH04: Pipers Lot. It became clear very early on in the project that this was a unique and biologically rich area that represents one of the few remaining tropical dry forests

in the region. In 2021, as the project started, Dr Archibald Piper and his family donated 14 acres of land to the Montserrat National Trust with the aim of preserving its rich biodiversity and natural heritage for ever. The site lends itself well to be a nature trail given that meanders through vibrant dry forest, typical of vegetation and alongside a serene freshwater stream. From 2021, this and several other projects (e.g. UK Government funded projects [DPL000311](#)) have been funded; these have enabled the MNT to develop plans for the site. The site is split into an upper and lower sections. Surveys were carried on the upper site to document plant species found there. 62 plant species were recorded on the upper site. The lower site has had no comprehensive survey undertaken, but more knowledge on this is noted in its Management Plan (drafted by Mr Chris Virginie Sealys with support from UKOTCF). Citizen-science monitoring of the site will continue.



Figure 3 (above): The new trail at Pipers Lot WH04.

WH05: EcoPlay is located close to the Montserrat National Trust offices in Salem. The site will be developed into an area where children can learn about nature in a safe space. As the site is developed, the Trust has used the area as a demonstration of an alternative an environmentally sensitive approach to clearing land which will be developed including for building. We noted that the percentage of vegetation cover made up of native plant species had increased by 15% and the number of invasives had increased by 9%.



The baseline insect surveys recorded 3 Herbivores, 107 Detritivores, 147 Pollinators, 2 Predators, 38 Not classed. Results in the follow-up year could not be compared here.

Figure 4 (left): Colony of endemic stingless bees (*Melipona varigates*) found on WH05.

The site had some special features; for example, Monty's Messengers children's club members have planted a row of endemic pribby, *Rondeletia buxifolia* on the edge of the site to involve young persons in the development and to increase their knowledge of native species and practical conservation efforts. It was the site of an invertebrate collections at one of the children's events run by the MNT. It was home (for a while as they moved on) to a colony of endemic stingless bees (*Melipona varigates*) in one of the birch trees on the edge of the property. This allowed people to get a close up look of the colony without disturbing it.

WH06: Look Out School is near the NE coast of the island and extremely exposed to wind and salt-spray resulting from the prevailing easterly winds. However, because of the open nature of the terrain, even during periods when the wind is in the west, the site suffers from this too. This very drying and salty exposure has effectively prevented the establishment of much ground vegetation on the school's playing field or bushes for shelter from the wind or trees to shelter from the sun in the boundaries around the playing area. The central area in the field is used as a multi-sports area. The lower portion of the open area is bordered by school buildings and the auditorium. We noted that the percentage of vegetation cover made up of native plant species had decreased by 8% and the number of invasives had decreased by 3%. The results here are mixed, but significant dry spells have played a part in the reduction of native and invasive species at this site. The results of the insect surveys are mixed. There was a large skew in the pollinator data in 2022 given the presence of bagworms (moths; technically pollinators) and herbivores ants; both were reduced by 2024 with the latter necessary given the presence of fire ants around the school field. Major progress in the project has been the planting of native bushes to provide a windbreak, allowing a change of microclimate and eventual development of more ground vegetation.

WH07: Lawyers Mountain is located close to the Centre Hills Protected Area boundary. The forest is the largest remaining forest area on Montserrat, forming a single, almost continuous block of hill forest in the centre of the island. This site is located near the Oriole Walkway, a popular walking trail. The habitat surrounding the site is typical of tropical wet forest. The number of plant species found at this site in 2024 was 119; an increase of 32 species. We noted that the percentage of vegetation cover made up of native plant species had increased by 36% and the number of invasives had decreased by 2%.



Figure 5: The view from Lawyers Mountain

The insect surveys provide a mixed picture. The difference recorded from 2022 to 2024 was as follows: increase by 31 in Herbivores, increase by 112 in Detritivores, decrease by 39 in Pollinators, increase by 6 in Predators, increase by 67 in Not classed. Looking at the results more closely, we see that the number of bees and wasps was given as 3 colonies and not as a figure. We have not tried to estimate the number of individuals in the bee/wasps colonies. It would be fair to assume that the overall the number of pollinators has increased.

WH08: Hibiscus Drive is located about 175m from the west coastline of Montserrat. It is adjacent to another site (WH13 Hibiscus Drive). The site is surrounded by coastal dry forest habitat made up of shrubs, tall grasses and trees. On the northern side of the land over a steep cliff, a waterway, Nantes River, runs towards the western coast. The number of plant species found at this site in 2024 was 93; an increase of 3 species. We noted that the percentage of vegetation cover made up of native plant species had decreased by 9% and the number of invasives had increased by 6%. The difference in observations from the invertebrate surveys recorded from 2022 to 2024 was as follows: decrease by 248 in Herbivores, decrease by 201 in Detritivores, increase by 34 in Pollinators, increase by 16 in Predators, decrease by 53 in Not classed. Looking at the results more closely, we see that large number of ants were seen in the first survey. When the house was purchased and the overgrown vegetation (invasive tamarind) was controlled, the soil became exposed. This allowed ants to colonise the area, particularly fire ants, which cause injury to humans and are known to displace other insects. These were controlled during the project and so the decrease in detritivores (ants) is explained. The decrease in true bugs s less so. The site owners have been particularly interested in the native and medicinal plants found on Montserrat. Tridax daisy, a native, but widespread flowering plant, has been encouraged; this is a favourite of many pollinators species and so could explain the increase in pollinators found; a positive for the aim of the project.

WH10: Lawyers Mountain is located close to WH07 and backs on to the Centre Hills Protected Area boundary. The number of plant species found at this site in 2024 was 72, a decrease of 26 species. These were mostly introduced. We noted that the percentage of vegetation cover made up of native plant species had increased by 25% and the number of invasives had increased by 4%. The difference in observations from the invertebrate surveys from 2022 to 2024 was as follows: decrease by 1 in Herbivores, decrease by 296 in Detritivores, decrease by 17 in Pollinators, decrease by 2 in Predators, increase by 11 in Not classed. Looking at the results more closely, the reduction in detritivores relates to ants, fire ants this decrease being positive for other wildlife and people.

WH12: Cassava Ghaut. The site is located on the edge of the mesic forest. the aim was to restore a piece of mesic forest, to remove invasive species which are preventing native plants from establishing and to provide a series of microhabitats for invertebrates and other wildlife, including a forest clearing. This has been achieved. The number of plant species found at this site in 2024 was 89; an increase of 10 species. We noted that the percentage of vegetation cover made up of native plant species had increased by 27% and the number of invasives had increased by 32%. Looking at these results more carefully, this is a result of fruit trees being allowed to

grow, mainly papaya and some mango. Technically according to the categorisations used, these are invasive species given their capacity to spread and to impact on other wildlife. With the site owner, the Project Officer has provided advice on management of these and control is advised. The importance of local food production on Montserrat should be considered here - which means that the count of invasive plant species remains similar to native species. The site is being managed for nature and people. It should be noted that forest birds, including the endangered Montserrat oriole *Icterus oberi*, are using this space created. The endemic bee, the bottle bee *Melipona variegatipes*, was seen on site and gave an opportunity to try the remarkable honey it produces. Overall, there has been an increase in pollinators (bees, wasps and butterflies) and a decrease in herbivores and detritivores (ants; if fire ants this is a beneficial, as indicated earlier). The difference in observations from the invertebrate surveys from 2022 to 2024 was as follows: decrease by 1 in Herbivores, decrease by 296 in Detritivores, decrease by 17 in Pollinators, decrease by 2 in Predators, increase by 11 in Not classed. Looking at the results more closely, the reduction in detritivores consists of ants: fire ants, the reduction in which is positive for other wildlife.

The site owner has worked extensively with the Project Officers and gardeners on this site. The costs associated with the management of the site have been noted as significant. This could be potentially prohibitive to others wishing to duplicate such endeavours. The Project Officers have discussed this and are attempting to address it through work at the MNT botanic garden to provide practical assistance, knowledge and information.



Figure 6: Collection by professional entomologist David Clements on WH sites

WH13: Hibiscus Drive. This site is located close to Nantes River on the west coast approximately 150m from the sea. The site owner has been carefully managing this site for many years with a vast amount of knowledge about the plants and insects found on Montserrat. This has benefited the project enormously. The number of plant species found at this site in 2024 was 124; a marginal increase of 5 species. These were mostly native species. We noted that the percentage of vegetation cover made up of native plant species had increased by 7% and the number of invasives had decreased by 11%. The number of pollinators has increased and the number of detritivores (ants in this case) has been reduced. This may be a positive thing if these are fire ant nests. This site has demonstrated the aims of the project well. The site owner forms part of the legacy group and will ensure that the project builds on this work in future.

Finally, it is noteworthy that a change in the area of native, introduced and invasive plants has been demonstrated at most sites. The heat map in Figure 1 below shows the differences documented at each site. While there is an increase in all categories at most sites, as stated throughout the project finds, website and other information sources, increases in certain invasive and introduced plant species is tolerable given the ecosystem services they provide to Adopters e.g. food, shade etc. Careful management is the key.

Figure 7: Heat map of the difference recorded in native, introduced and invasive species at each Wildlife Home Site.

The heatmap uses a yellow-to-dark-green gradient, where yellow represents the lowest values and dark green represents the highest values, for better visual clarity. Note that those with an * only had one survey and so cannot be compared.

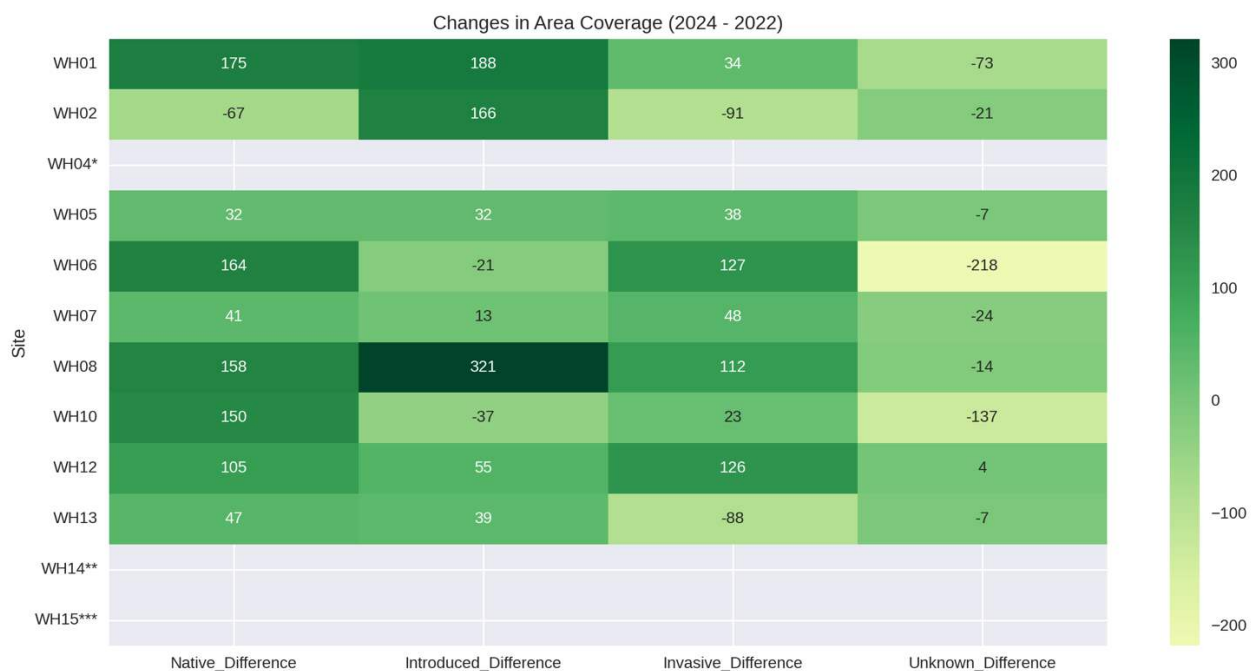


Table 1: Sites, Locations, Descriptions and Key Findings

Site Reference	Site Location	Site Name	Site Description	Notes of biodiversity and status
WH01	Part of Garibaldi Hill	Ventana	Tropical Dry Forest – relatively intact and being restored	We noted an increase in +34 species at this site. The site has been managed for over 10 years with the intention of restoring an area of tropical dry forest. The site has been cleared of invasive species through ring barking and other techniques.
WH02	Belham River Mouth, Old Road Bay	Land leased	Golf course next to coast at Old Road Bay with natural vegetation and re-excavated wetlands	We noted an increase in +31 plant species at this site.
WH03	Cork Hill village (could equate to several Wildlife Homes)	Cork Hill Reunion Committee	Formerly in volcano exclusion zone, that part of it now opening up. Natural/traditional vegetation to be restored after over-running by Java plum (local name black-berry) in the 20 years management impossible	Was included in Phase 1 sites, but as indicated above a second survey not within scope of funded part of project. No management activities took place due to external factor.
WH04	Pipers land donation, at Frith	MNT & tenant	Most likely at transition between wet and dry forest. Nature trail etc: natural area, with possible fruit planting & small campsite	Related but separate exercise undertaken here as site sought and was granted additional funds (DP Local). See detail above.

WH05	Natural part of Eco-Play site	MNT	In Salem, a built-up settlement next to botanic park. Re-establish native vegetation in small area	We noted an increase in +4 plant species at this site.
WH06	School grounds	Lookout School	Re-establish native (and possibly traditional) vegetation (crops, medicinal and native plants) in small area; barren disturbed ground. On Eastern side of island so very windy and exposed: plant native-species shelter-belt.	We noted a decrease in -24 plant species at this site.
WH07	Lawyers Mountain 1	Private Individual	Centre Hills outside the protected area, good buffer habitat.	We noted an increase in +32 plant species at this site.
WH08	Hibiscus Drive	Private Individuals	Garden which needs redesigning and planning; coastal vegetation in semi-inhabited area of Olveston site; also contains riparian habitat (ghauts)	We noted an increase in +3 plant species at this site.
WH10	Lawyers Mountain 2	Private Individual	Centre Hills outside the protected area, good buffer habitat. Near Oriole walkway nature trail	We noted a decrease in -26 plant species at this site.
WH11	Javon Sweeny (two sites)	Private Individual	No detailed surveys undertaken at sites due to external factors.	Included here as information provided on bee-keeping and native fauna
WH12	Cassava Ghaut	Private Individual	Cassava Ghaut; close to Centre Hills Protected Area boundary	We noted an increase in +10 plant species at this site.

WH13	Hibiscus Drive	Private Individual	Both in ghaut habitat; close to coast	We noted an increase in <u>+5</u> plant species at this site.
WH14	Tropical Mansions	Business	Only year 1 survey	Phase 2 site, second survey not within scope of funded part of project
WH15	Barzey's	Private Individual	Only year 1 survey	Phase 2 site, second survey not within scope of funded part of project

Final thoughts

As the funded part of the project ends on behalf of the Project Leads, Officers, experts and wider project partners we would like to say thank you to the Adopters; individuals, community groups for allowing access to their sites to conduct surveys and make visit. The project has learned so much from you all. We hope that it has been insightful to you as well and we look forward to future continuing work to project the islands wildlife.