



FLORADEX PROJECT REPORT

TAMAR VALLEY 2024



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THE PROJECT

This project is with Pollenize and Tamar Valley Centre to conduct wildlife surveys (Bioblitz) at Tamar Valley Centre to gather baseline data for local nature recovery and greenspace plans, enhancing community engagement in nature conservation. The project was conducted between June - October 2024. This was funded through DEFRA's Farming in Protected Landscapes.

COLLABORATION

Collaborating with the Tamar Valley Centre brings benefits, including enhanced community engagement and a broader reach through combined networks and joint promotional efforts. The collaboration allows for resource sharing, leveraging diverse expertise, and ensuring a uniform approach to data collection through the use of the iNaturalist app.

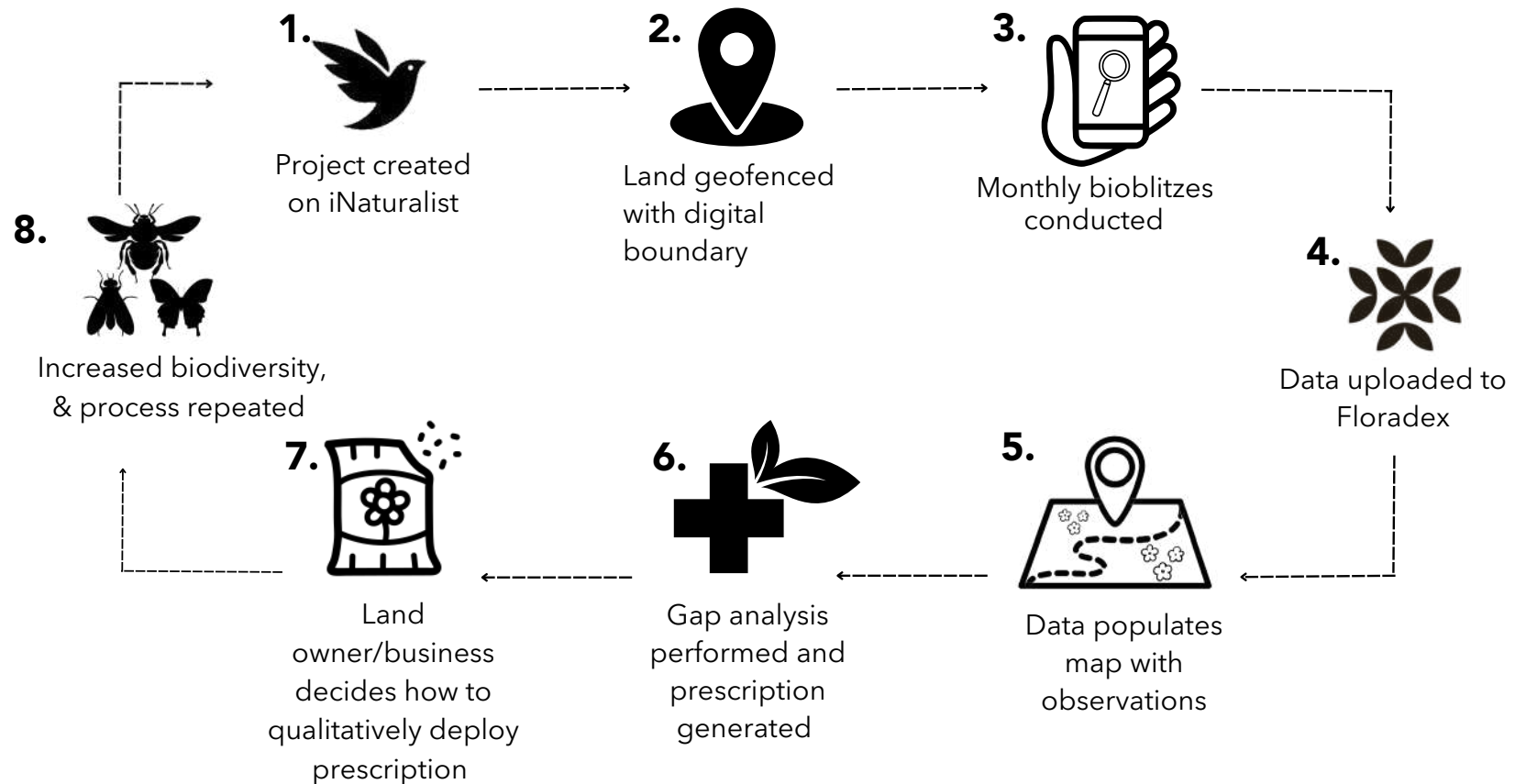
The collaboration strengthens the overall impact of the events, leading to more effective conservation efforts and community involvement. Additionally, the shared learning and capacity building fosters a stronger approach to future projects, with the potential for increased funding opportunities.



THE METHODOLOGY

A bioblitz is short intensive period of biological surveying in a given area. This method of environmental monitoring can build a picture of biodiversity, inform conservation efforts, and encourage citizen science participation.

The free iNaturalist app digitally records observations with time, date, and location stamps, supporting accurate and automated data collection. It creates research-quality data for scientists.



OVERVIEW ACROSS CENTRAL PARK NATURE COUNTS SITE

The stats below are the total number of observations made, species observed, identifiers, and observers in the project areas of Tamar Valley Centre.

681 TOTAL OBSERVATIONS

These are individual records of species, often including photos or sounds, that users submit. Each observation represents an encounter with a species

202 OBSERVED SPECIES

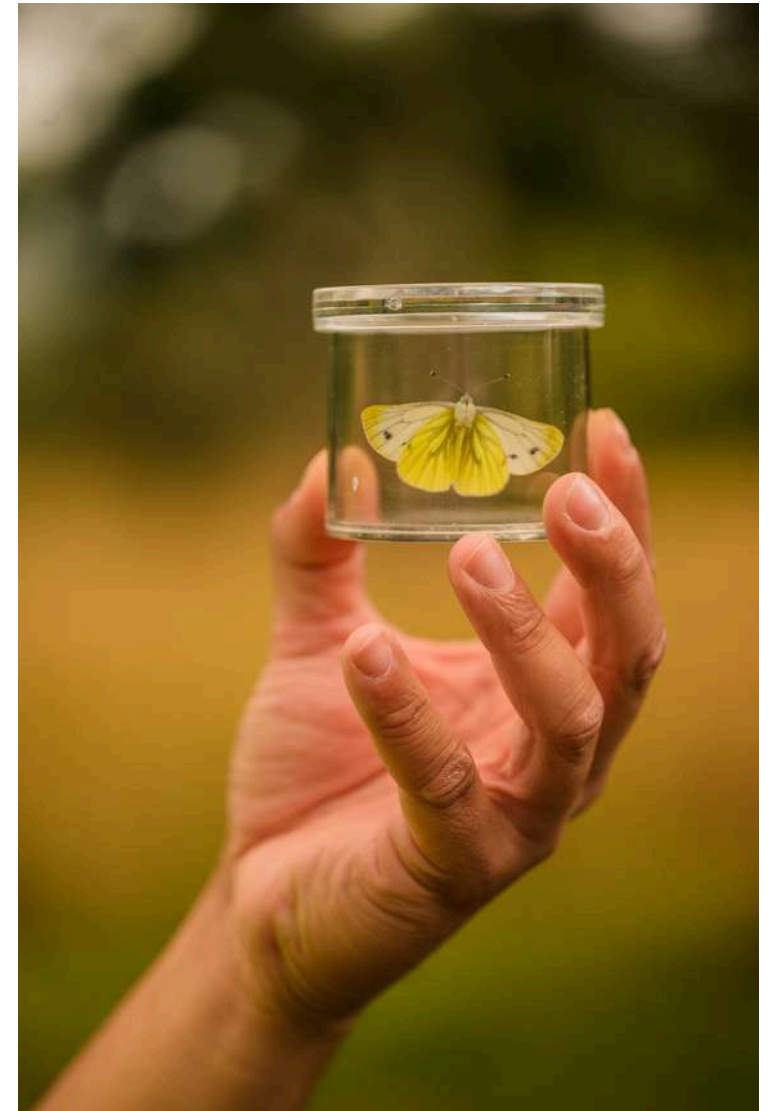
This counts the different species recorded in the project, based on the observations.

132 IDENTIFIERS

These are the users who help confirm or suggest identifications for observations, assisting with the accuracy of species identification.

14 OBSERVERS

These are the users who submit observations, contributing data to the project.

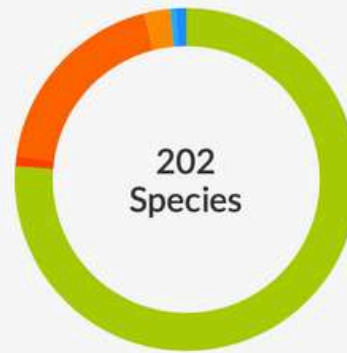


HIGH LEVEL STATS FROM TAMAR VALLEY

Stats



- Research Grade
- Needs ID
- Casual



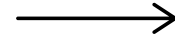
- Unknown
- Protozoans
- Fungi
- Plants
- Chromista
- Mollusks
- Insects
- Arachnids
- Ray-Finned F...
- Amphibians
- Reptiles
- Birds
- Mammals
- Other Animals



- Improving
- Supporting
- Leading
- Maverick

A MAP OF OBSERVATIONS

An image of the observations made over the project duration. This visualisation helps users understand where species being observed.



CLICK THE LINK TO VISIT PAGE OF OBSERVATIONS



Tamar Valley National Landscape

Tamar Valley Centre
Bioblitz Tamar Valley Centre
iNaturalist



FLORDEX PRESCRIPTION

Floradex is a dynamic software statistical package that analyses insect and plant data observations from a surveyed location and suggests, in ranked order, the next best trees, shrubs, and flowers you could plant to improve biodiversity. Floradex conducts a presence and absence calculation of data, not abundance, so it will not count species multiple times. It performs a gap analysis based on these two data.gov UK databases.

- Plant-pollinator interactions database for construction of potential networks (all known pollinator-plant interactions on mainland GB) (See Appendix for further explanation)
- Insect species richness for each plant species and insect-plant interactions from the Database of Insects and their Food Plants [DBIF] (over 60,000 insect-plant interactions with native plants) (See Appendix for further explanation)

We use iNaturalist to collect our insect and plant data as it is time-stamped, dated, and geo-located, and can be pulled off as a CSV list to input into Floradex. The way we have collected data is with citizen scientists through the method called a 'Bioblitz'.

The prescription has been broken down into **Flowers**, **Trees** and **Shrubs** showing the top 10 ranked plant species to improve biodiversity in this report. **A full data set will be sent separately as a CSV list.**

It is up to the landowner/organisation to take this quantitative data and employ it qualitatively on the surveyed location they wish to improve.

FLORADEX DATABASE

499 INDIVIDUAL SPECIES OF **PLANTS**
IN THE PLANT-POLLINATOR
INTERACTION DATABASE AND **485**
POLLINATOR SPECIES,
16712 INTERACTIONS IN TOTAL.

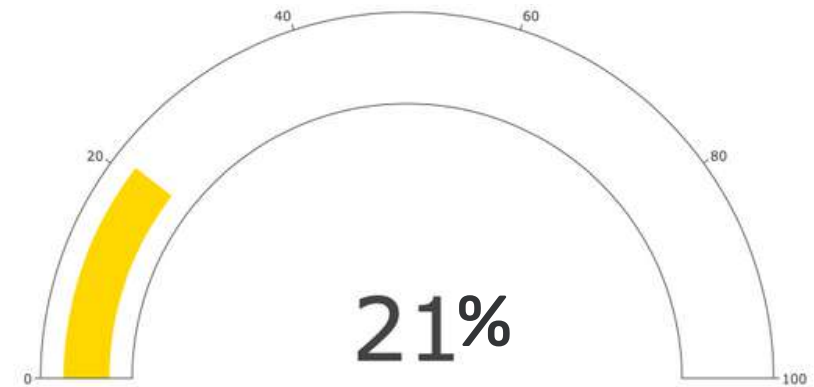
***POLLINATING INSECTS** THAT POLLINATE THESE
PLANTS*

1033 INDIVIDUAL SPECIES OF **PLANTS**
IN THE INSECTS-FOOD PLANT
DATABASE AND **4397** **INSECT SPECIES**,
13149 INTERACTIONS IN TOTAL.

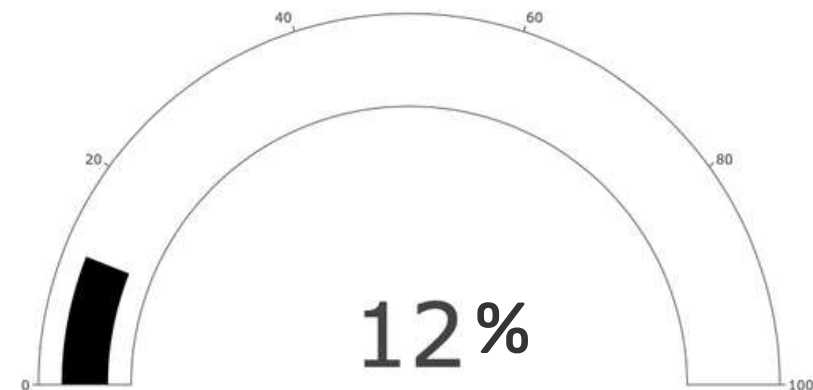
INSECTS** THAT EAT THE HOST **PLANTS

EXPRESSED AS PERCENTAGES

**103 OF 499 PLANT-POLLINATOR SPECIES HAVE
BEEN OBSERVED.**



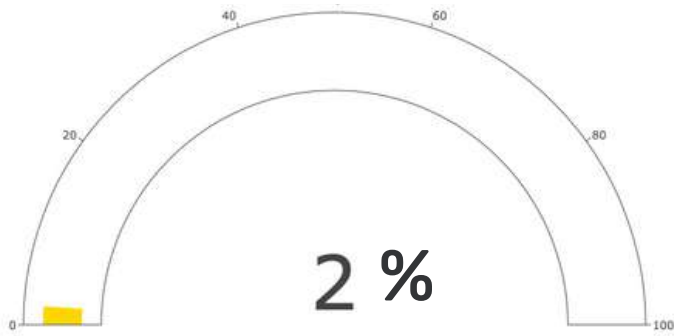
**119 OF 1033 INSECT-FOOD PLANT SPECIES
HAVE BEEN OBSERVED.**



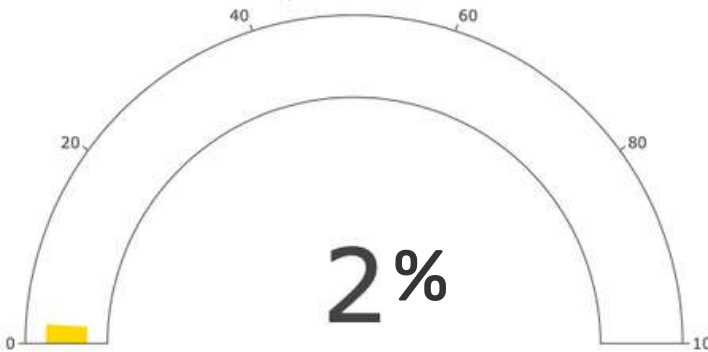
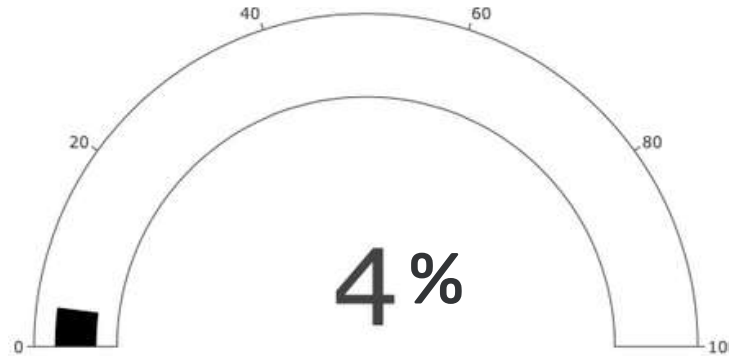
PERCENTAGE OF **POLLINATOR SPECIES OBSERVED** AT TAMAR VALLEY ON THE **PLANTS OBSERVED**.

EXPRESSED AS PERCENTAGES

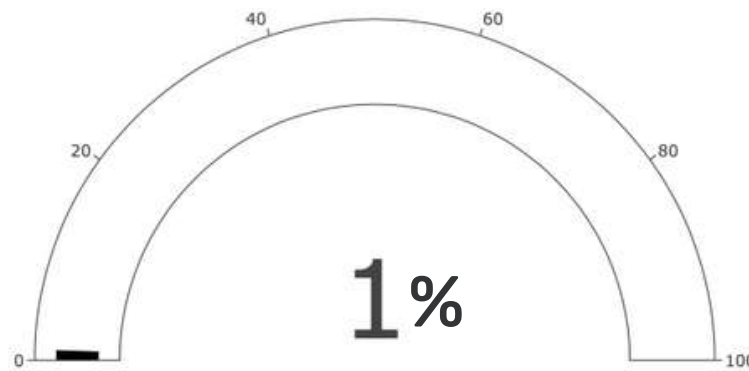
TOTAL POLLINATORS OBSERVED 7/485



2 OF 56 BUTTERFLY SPECIES HAVE BEEN OBSERVED.



5 OF 206 BEES SPECIES HAVE BEEN OBSERVED.



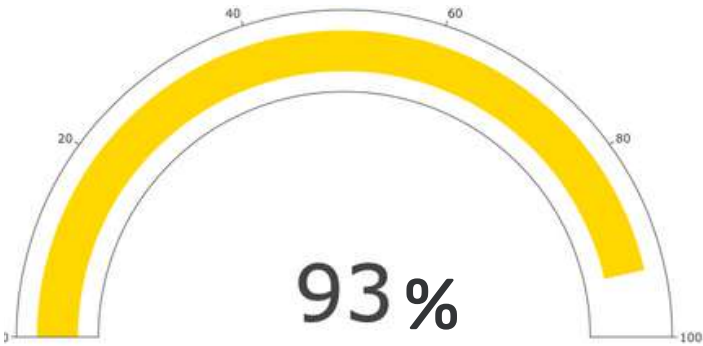
3 OF 223 HOVERFLY SPECIES HAVE BEEN OBSERVED.



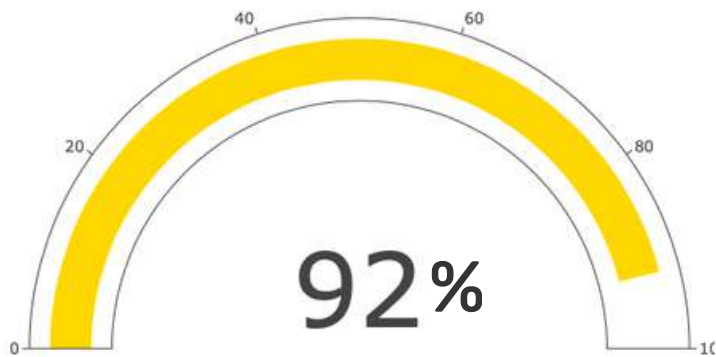
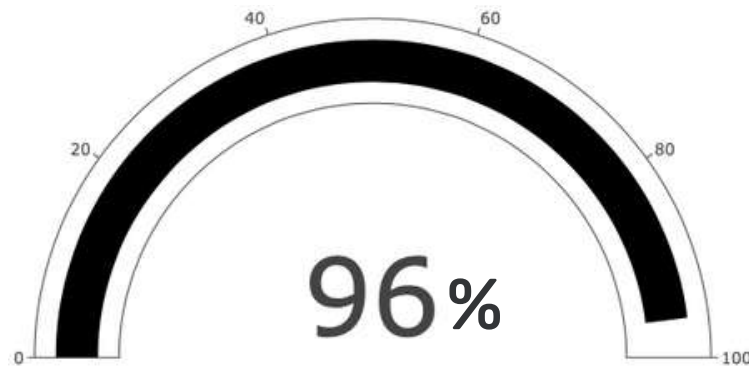
PERCENTAGE OF **POTENTIAL POLLINATOR SPECIES** THAT COULD BE FOUND AT TAMAR VALLEY ON THEIR INTERACTIONS WITH THE **PLANTS OBSERVED.**

EXPRESSED AS PERCENTAGES

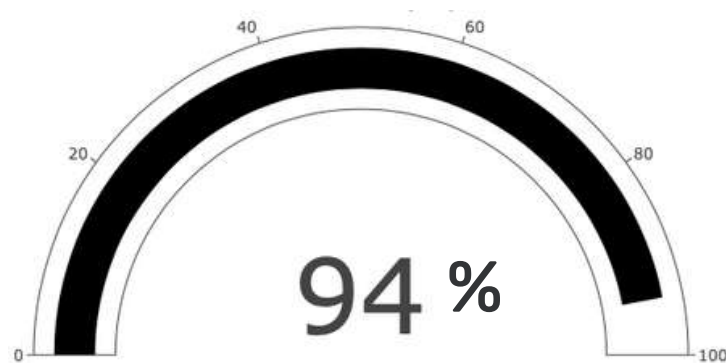
TOTAL POTENTIAL POLLINATORS 453/485



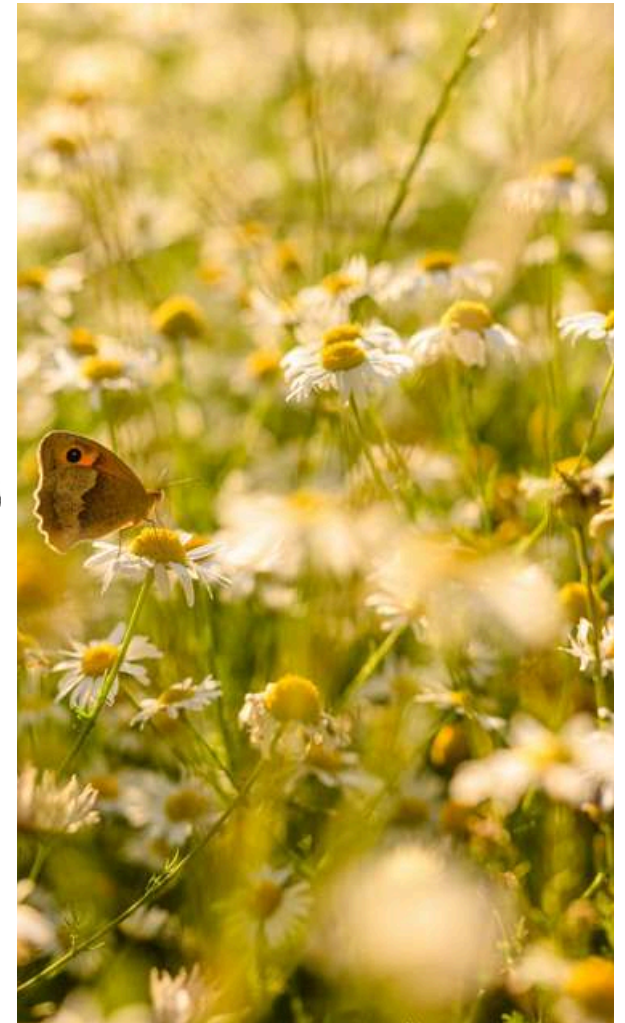
54 OF 56 BUTTERFLY SPECIES POTENTIALLY INTERACT WITH THE **PLANT SPECIES OBSERVED**



190 OF 206 BEE SPECIES POTENTIALLY INTERACT WITH THE **PLANT SPECIES OBSERVED**

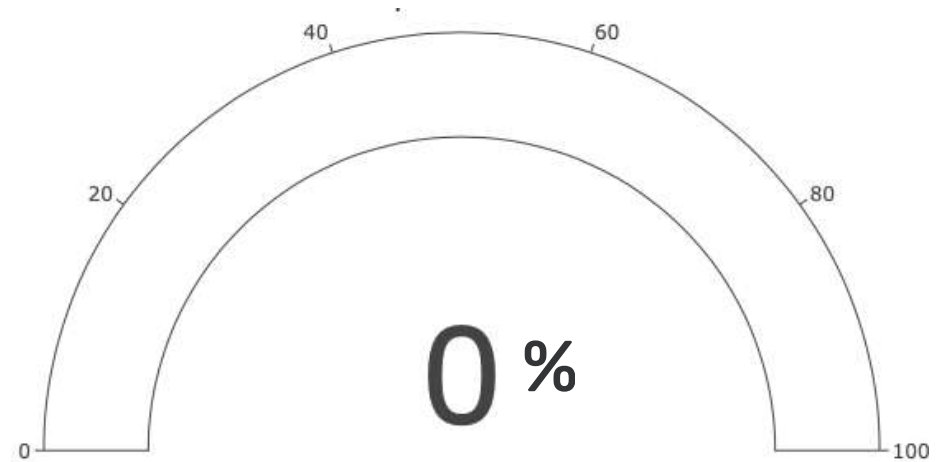


209 OF 223 HOVERFLY SPECIES POTENTIALLY INTERACT WITH THE **PLANT SPECIES OBSERVED**



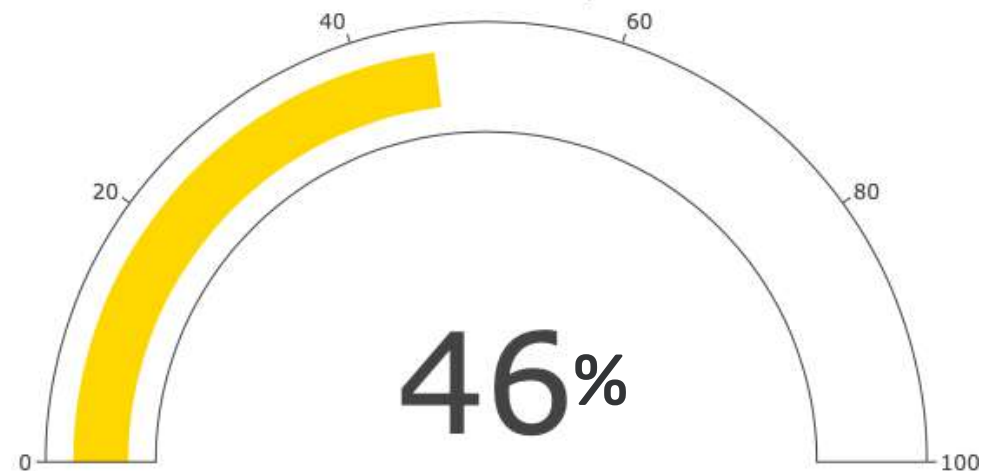
**PERCENTAGE OF OBSERVED
INSECTS AT TAMAR VALLEY
BASED ON THE PLANT SPECIES
OBSERVED.**

**13 OF 4397 INSECT SPECIES HAVE
BEEN OBSERVED.**



**PERCENTAGE OF POTENTIAL
INSECTS THAT COULD BE
OBSERVED AT TAMAR
VALLEY BASED ON THE
PLANT SPECIES OBSERVED.**

**2008 OF 4397 INSECT SPECIES POTENTIALLY
INTERACT WITH THE PLANT SPECIES OBSERVED.**



FLORDEX PRESCRIPTION 1 FLOWERS

FLORADEx PRESCRIPTION FOR FLOWERS - NEW POTENTIAL INTERACTIONS ARE AS FOLLOWS: POLLINATORS = 1354, INSECTS =89

	PLANT_NAME	Common_name	Plant_type	Bee	Butterfly	Hoverfly	Total_pollinators	Total_insects	Rank
6	ranunculus flammula	Lesser spearwort	Perennial	30	21	115	166	1	18
8	ranunculus lingua	Greater spearwort	Perennial	30	21	113	164	1	21
10	cirsium acaule	Dwarf thistle	Perennial	30	42	77	149	0	25
11	cirsium heterophyllum	Melancholy thistle	Perennial	28	42	77	147	1	26
12	cirsium dissectum	Meadow thistle	Perennial	27	42	77	146	3	27
13	cirsium tuberosum	Tuberous thistle	Perennial	27	42	77	146	2	28
14	centaurea scabiosa	Greater knapweed	Perennial	39	35	68	142	24	29
16	leontodon saxatilis	Lesser hawkbit	Perennial	20	22	59	101	0	35
17	succisa pratensis	Devil's bit scabious	Perennial	26	25	47	98	24	36
19	origanum vulgare	Oregano	Perennial	31	32	32	95	33	38

FLORDEX PRESCRIPTION **2** TREES

FLORDEX PRESCRIPTION FOR TREES - NEW POTENTIAL INTERACTIONS ARE AS FOLLOWS: **POLLINATORS = 1056, INSECTS = 585**

	PLANT_NAME	Common_name	Plant_type	Bee	Butterfly	Hoverfly	Total_pollinators	Total_insects	Rank
2	salix fragilis	Crack willow	Tree	46	3	138	187	50	8
3	salix alba	White willow	Tree	45	3	138	186	110	9
4	salix pentandra	Bay willow	Tree	45	3	138	186	10	10
5	salix viminalis	Osier willow	Tree	45	3	138	186	61	11
33	prunus padus	Bird cherry	Tree	19	5	46	70	23	62
45	prunus domestica	Common plum	Tree	28	5	23	56	78	82
56	malus sylvestris	European crab apple	Tree	16	1	31	48	211	97
63	prunus cerasifera	Cherry plum	Tree	19	4	23	46	4	109
64	prunus cerasus	Sour cherry	Tree	19	4	23	46	26	110
65	acer platanoides	Norway maple	Tree	8	0	37	45	12	111

FLORDEX PRESCRIPTION **3** SHRUBS

FLORDEX PRESCRIPTION FOR **SHRUBS** - NEW **POTENTIAL INTERACTIONS** ARE AS FOLLOWS: **POLLINATORS = 867, INSECTS =493**

	PLANT_NAME	Common_name	Plant_type	Bee	Butterfly	Hoverfly	Total_pollinators	Total_insects	Rank
0	salix repens	Creeping willow	Shrub	46	3	139	188	69	5
1	salix aurita	Eared willow	Shrub	46	3	138	187	60	7
20	calluna vulgaris	Heather	Shrub	36	32	26	94	131	39
32	senecio cineraria	Silver ragwort	Shrub	40	6	25	71	0	59
35	thymus polytrichus	Woolly thyme	Shrub	30	28	11	69	0	64
42	potentilla fruticosa	Shrubby cinquefoil	Shrub	12	19	29	60	10	75
46	rubus idaeus	Red raspberry	Shrub	42	6	7	55	66	85
48	cytisus scoparius	Scotch broom	Shrub	14	2	36	52	115	88
55	ligustrum ovalifolium	Garden privet	Shrub	3	23	22	48	2	96
73	erica cinerea	Bell heather	Shrub	24	11	8	43	40	124

FLORDEX PRESCRIPTION

THE STRATEGIC PLANTING AND SUCCESSFUL ESTABLISHMENT OF THE TEN TOP RANKED **FLOWERS, TREES & SHRUBS** (INTRODUCTION OF **30 NEW PLANT SPECIES**) COULD YEILD AN INCREASE IN THE **POTENTIAL PLANT-POLLINATOR INTERACTION AND INSECT-FOOD PLANT INTERACTION** SCORES AS FOLLOWS:

TOTAL POLLINATORS = +3277: SUBDIVIDED BEES +871, BUTTERFLIES +488, HOVERFLIES +1981

- A 19.61% POTENTIAL INCREASE

TOTAL INSECTS = +1167

- A 8.88% POTENTIAL INCREASE

THE HIGHER THE NUMBER OF POTENTIAL INTERACTIONS THE MORE COMPLEX AND STABLE THE BOTANICAL ASSEMBLAGE CAN PROVIDE FOR POLLINATORS AND INSECTS ONSITE.

CAVEAT FOR RECOMMENDED PLANT SPECIES

THE PLANTS INCLUDED IN THIS RECOMMENDATION LIST (TREES, SHRUBS, AND PERENNIALS) ARE INTENDED TO SUPPORT BIODIVERSITY AND ENHANCE ECOLOGICAL HEALTH. HOWEVER, IT IS THE RESPONSIBILITY OF THE LANDOWNER OR RECIPIENT OF THIS LIST TO CAREFULLY REVIEW EACH SPECIES BEFORE PLANTING. SOME SPECIES MAY BE REGULATED OR RESTRICTED DUE TO THEIR INVASIVE POTENTIAL OR ENVIRONMENTAL IMPACT. SPECIFICALLY, CERTAIN PLANTS MAY BE LISTED ON THE FOLLOWING:

- **THE WILDLIFE AND COUNTRYSIDE ACT 1981 (SCHEDULE 9)**
- **THE INVASIVE ALIEN SPECIES (ENFORCEMENT AND PERMITTING) ORDER 2019**
- **THE NON-NATIVE SPECIES SECRETARIAT (NNSS) DATABASE**
- **THE WEEDS ACT 1959**

WE ADVISE RECIPIENTS TO CHECK CURRENT REGULATIONS OR CONSULT RELEVANT AUTHORITIES TO ENSURE COMPLIANCE AND AVOID THE PLANTING OF RESTRICTED SPECIES.

AS PART OF FUTURE IMPROVEMENTS, OUR FLORADEx DATABASE WILL INCORPORATE AUTOMATED CHECKS TO EXCLUDE ANY SPECIES IDENTIFIED ON THESE REGULATORY LISTS.

APPENDIX

Plant-Pollinator Interactions Database: This database focuses exclusively on the interactions between pollinators and plants within Great Britain. It aims to construct potential networks by documenting all known interactions between pollinators (organisms that aid in the transfer of pollen from one flowering plant to another, thereby facilitating fertilisation and reproduction) and plants. This database is essential for understanding and mapping the ecological dynamics of pollination within specific ecosystems.

Database of Insects and their Food Plants (DBIF): This database provides a broader look at insect-plant interactions by cataloging over 60,000 interactions specifically between insects (a class of arthropods characterized by a chitinous exoskeleton, a three-part body, three pairs of jointed legs, compound eyes, and two antennae) and native plants. It not only includes pollinators but also other types of interactions such as herbivory (where insects feed on plants). This makes it a comprehensive resource for studying species richness and the various ways insects depend on, interact with, or affect plant species across different habitats.

