

A dense, close-up photograph of a large number of bees, likely honeybees, on a honeycomb. The bees are in various orientations, some facing forward, some in profile, and some with their wings spread. The honeycomb cells are a warm, golden-brown color, and the bees' bodies are a mix of black and yellow. The overall scene is a busy, naturalistic depiction of a beehive.

S.N.H.B.S.

Ian Lennox

The **aims** of the Scottish native Honey Bee Society are to promote the

Conservation
Maintenance
Breeding
& Study

. . . . of the honey bee which is native to Scotland and is endangered by the uncontrolled importation of honey bees unsuited to our Scottish Climate.





S.N.H.B.S.

CONSERVATION
PROJECT

SUMMARY

Phase 1 Find candidate colonies

Phase 2 Obtain lines

Phase 3 Assess the lines



PHASE 1

Find candidate colonies

Those that have characteristics corresponding as closely as possible with *Apis mellifera mellifera*

- Conduct a survey
- Select the most appropriate top scoring colonies



PHASE 2

Obtain lines – seek material to raise virgin queens from these selected stocks.

This material given to volunteers capable of raising queens

&

who have access to an area with *Amm* drones to mate with these virgins.

Successfully mated queens will be transferred to another volunteer for assessment.



PHASE 3

Assessing the Lines

Determine scores in the subsequent season for the line in a reasonably coordinated manner.

Scoring - temper, brood, pattern, chalk, vigour and the like for all the daughter queens raised.

Distribute information on these lines and make these colonies available through the egg distribution scheme at minimal cost to SNHBS members.



Timescale

17th
APRIL

PHASE 1- Survey

Launch: Submissions of data from candidate colonies will be accepted.

17th MAY

Closing date: for acceptance of submissions.

31st MAY

Completion: of data analysis
. . . . after which we begin Wing Morphometry Analysis together with DNA testing on frozen samples of bees.

Early
June

PHASE 2- Obtain Lines

Commence queen raising ASAP after final selection of top scoring colonies. Cognisance being taken of the swarming season.

2019

PHASE 3 - Assessment of Lines



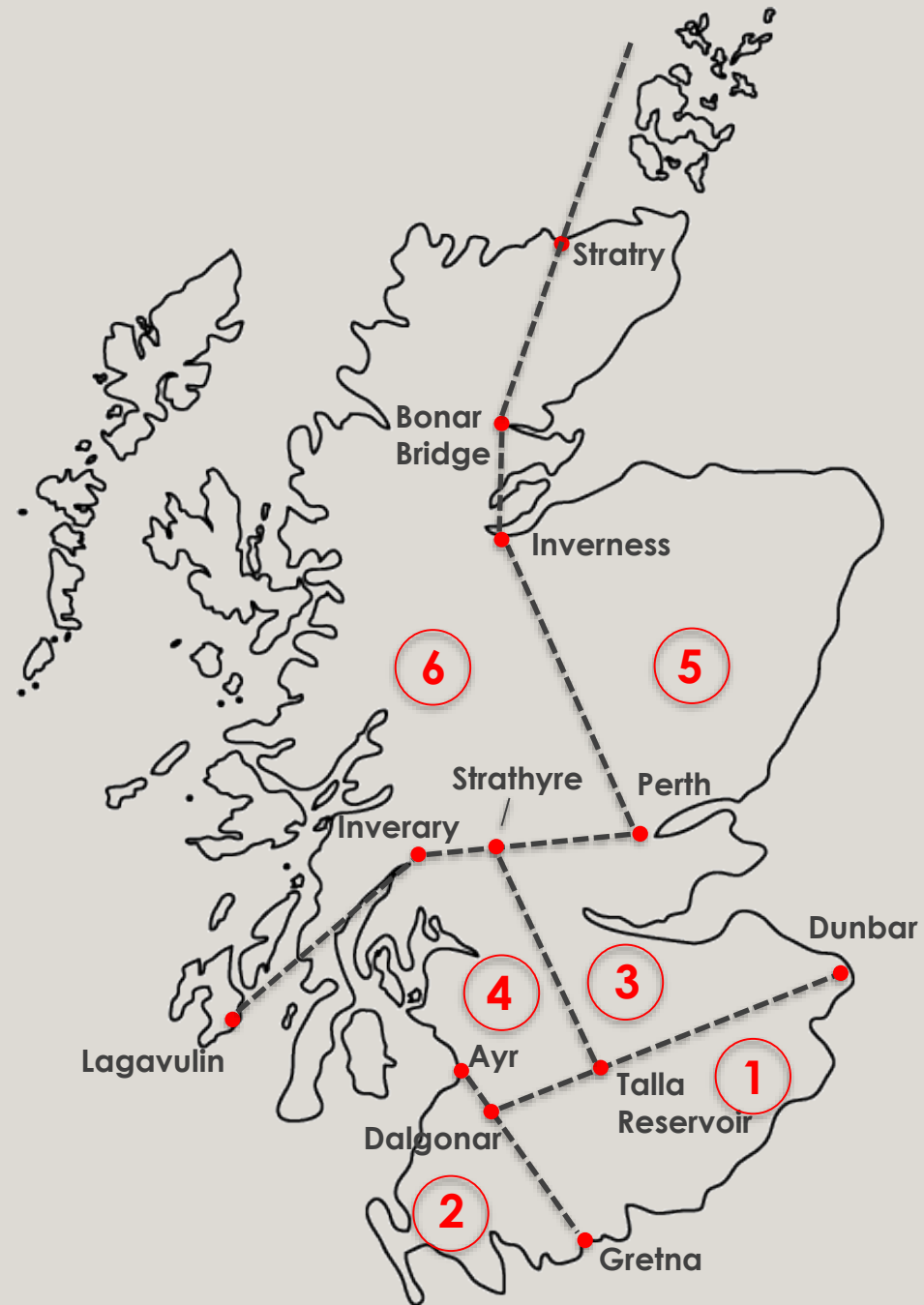


SURVEY

OVERVIEW

The country will be divided into 6 Regions :-

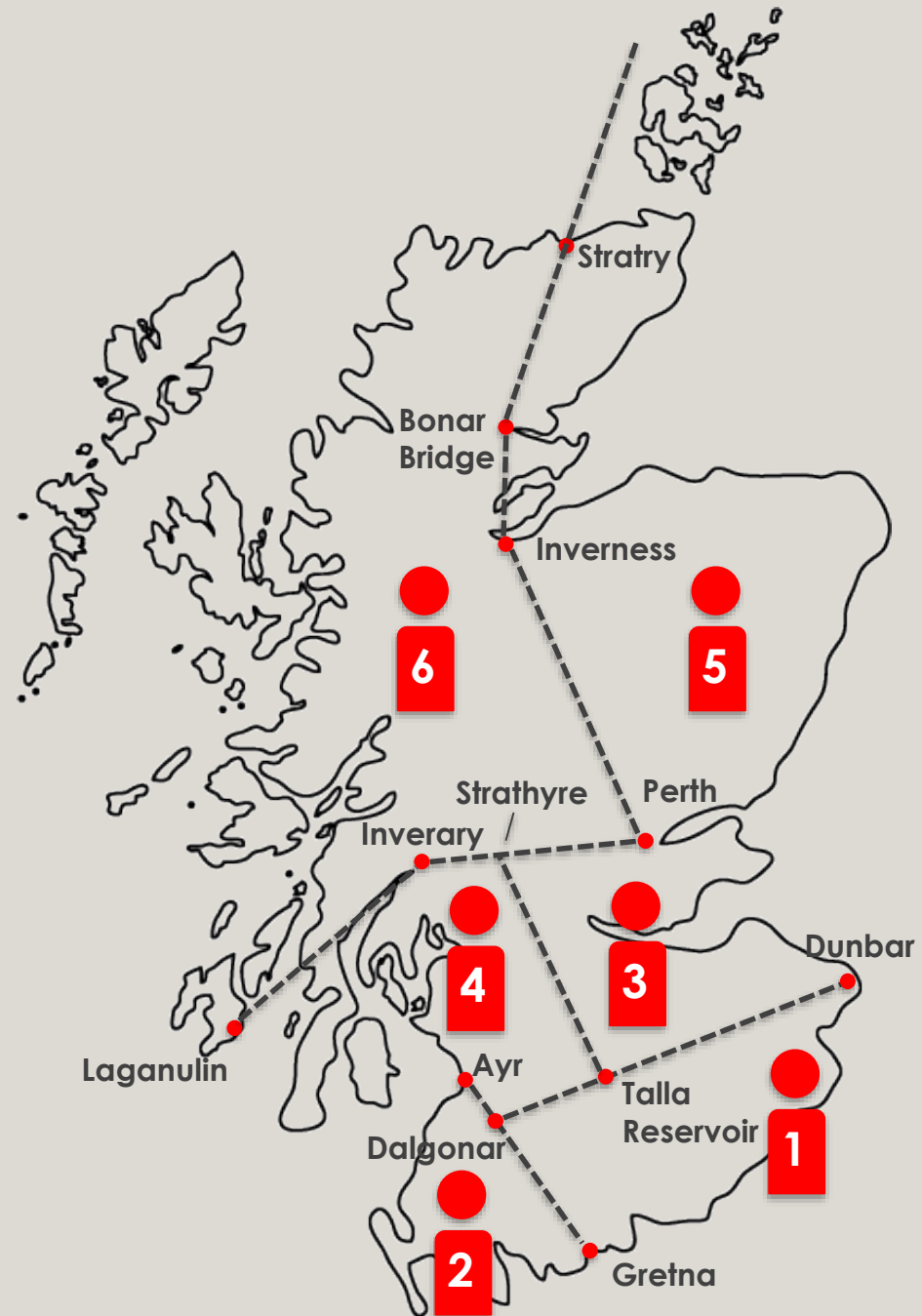
- 1 – The Borders
- 2 – South West Scotland
- 3 – East Central Scotland
- 4 – West Central Scotland
- 5 – The North East & Northern Isles
- 6 – The North West & Hebrides



Each Region will have an appointed official called a **LOCAL CURATOR.** (LC)

This person will be the link between the membership and the Survey System.

He/she will receive all details of the colonies which the individual members consider to be worthy of submission to the survey.



Specifics required for member submitted detail :-

For obvious logistical reasons this survey is reliant on visual interpretation of **photographs** of the bees from each colony submitted.

The minimum basic submission data from each hive which survey participants are asked to provide initially, is **3 digital high resolution photographs**

showing part of one face, of three different frames covered in bees.



The target for digital analysis is to have **at least 20 bees** in total in sharp focus.

Only pictures of dark native honey bees will be accepted.



It may be that for promising material we will request a **sample of workers** and, if possible drones for closer scrutiny.

This where images alone may not give sufficient clarity on features of interest.



SUBMISSIONS

should be made to
your LC on a

Member Input Form

This enable speedy
data entry into the
system.

SNHBS 2018 Conservation Survey

Member Input Form

Name _____

Date _____

	Apiary No.	Hive No.	Image Filename
Submission 1		1	
	Apiary Postcode	2	
		3	
Submission 2		1	
	Apiary Postcode	2	
		3	
Submission 3		1	
	Apiary Postcode	2	
		3	
Submission 4		1	
	Apiary Postcode	2	
		3	
Submission 5		1	
	Apiary Postcode	2	
		3	
Submission 6		1	
	Apiary Postcode	2	
		3	
Submission 7		1	
	Apiary Postcode	2	
		3	
Submission 8		1	
	Apiary Postcode	2	
		3	
Submission 9		1	
	Apiary Postcode	2	
		3	
Submission 10		1	
	Apiary Postcode	2	
		3	

Return this form + image files via email to your Local Curator

FIRST FILTER

The LC will act as a “first filter” and will reject any images deemed to be eg. . .
'of inadequate quality'
or if the bees are obviously having colour not associated with *Amm*.

The other submitted data will be checked for accuracy and completeness and then uploaded into the system via a Data Submission Sheet.

This completes the Data Entry Phase.

Sheet1

DRAFT **Survey - Data Submission Sheet**

LC No

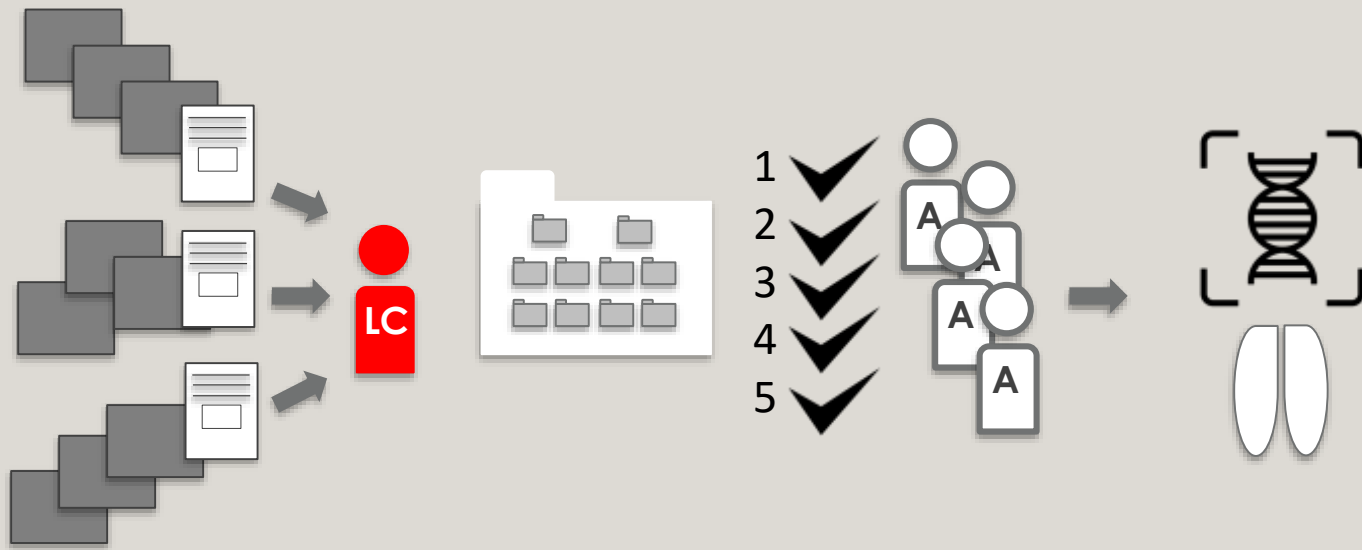
Date Entered on Register

Submission Postcode

Identifier

Image

Comments



Once up-loaded to the system these individual submissions, consisting of 3 images + the associated Data Submission Sheet, are “parcelled” into groups of 10 and routed to a Master file where the images will be manually scored against 5 criteria being the significant visual attributes of *Amm*.

This completes the Assessment Phase.

Questions?



The small print

We are using **Dropbox** as the platform for this survey. All aspects of the computer systems have been evaluated by simulation and are now showing no glitches after test. (so far)

We are asking for apiary **postcodes** for all submitted colonies. The purpose is to construct a geographical picture of the distribution of the near native stocks that we find.

We are only asking for the **AREA** and **DISTRICT** elements of the code – **Not the full postcode.**

Example - my full postcode is KA23 9JJ – the AREA being KA and the DISTRICT is 23. Hence if I were submitting a survey entry what I need to enter in the Members Input Form would be only KA23.

None of the postcodes submitted will be used for any other purpose, they will remain entirely within the survey system, be seen only by the Project Team and will not enter the public domain.

This information is included to allay any fears over data protection.



How to have your colonies entered in the Survey.

- Decide, only if you stocks are “black”. **No Yellow!**
- Map to be circulated to all the members along with emails of all the Local Curator (L.C.)
- Decide which Region your submitted stocks are in and contact L.C. via email
- The L.C. will send back an ENTRY PACK :-
 - Instruction Sheet
 - Sample of completed members Input Form
 - Blank Members Input Form
 - Sample Image – style, focus and quality
- Take photos - complete Member Input Form – email to L.C.
- Questions ? Contact Original L.C.



FINALLY -- FINALE

- A. Select your stocks for inclusion RESPONSIBLY
- B. Get your submission in AS EARLY AS POSSIBLE



SURVEY STATISTICS ----- PROJECTIONS 161 Members

6.5 weeks = 45.5 days 7
38.5

Survey assessment time estimate

% of members submitting = 100%

To retrieve, assess and enter scores on 1 hive = 3 images.	7	7	7	8	8	8	10	10	10	
no of members	161	161	161	161	161	161	161	161	161	
Average no. of hives submitted per member	241.5	1.5	2	2.5	1.5	2	2.5	1.5	2	2.5
Total Colonies to Assess	242	322	403	242	322	403	242	322	403	
Total "clean" time required per Assessor	Man hrs	29	38	48	33	43	54	41	54	68
For 4 assessors	Man hrs	116	152	192	132	172	216	164	216	272
Days at 8 m/h per day	15	19	24	17	22	27	21	27	34	

% of memb Take up 90%

To retrieve, assess and enter scores on 1 hive = 3 ir Mins	7	7	7	8	8	8	10	10	10	
no of members	161	161	161	161	161	161	161	161	161	
Average no. of hives submitted per member	1.5	2	2.5	1.5	2	2.5	1.5	2	2.5	
Total Colonies to Assess	218	290	363	218	290	363	218	290	363	
Total "clean" time required per Assessor	Man hrs	26	34	43	30	39	49	37	49	61
For 4 assessors	Man hrs	104	136	172	120	156	196	148	196	244
Days at 8 m/h per day	13	17	22	15	20	25	19	25	31	

% of memb Take up 80%

To retrieve, assess and enter scores on 1 hive = 3 ir Mins	7	7	7	8	8	8	10	10	10	
no of members	161	161	161	161	161	161	161	161	161	
Average no. of hives submitted per member	1.5	2	2.5	1.5	2	2.5	1.5	2	2.5	
Total Colonies to Assess	194	258	322	194	258	322	194	258	322	
Total "clean" time required per Assessor	Man hrs	23	31	38	26	35	43	33	43	54
For 4 assessors	Man hrs	92	124	152	104	140	172	132	172	216
Days at 8 m/h per day	12	16	19	13	18	22	17	22	27	

SURVEY PROJECTIONS

THANK YOU

