PRELIMINARY ECOLOGICAL APPRAISAL & PRELIMINARY BAT ROOST ASSESSMENT OF:

7 GARRISON LANE
HUGH TOWN
ST MARY'S
ISLES OF SCILLY
TR21 0JL

Client: Mrs R Guy

Our reference: BS12-2018

Report date: 1st May 2019

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Non-Technical Summary

- On 1st May 2019, the Isles of Scilly Wildlife Trust (IoSWT) conducted a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) of 7 Garrison Lane, St Mary's, Isles of Scilly, TR21 0JL (BS12-2018), for which there is a proposal to convert the loft of the single-storey dwelling into two bedrooms, comprising two dormer windows with a north and south aspect. There are also plans for a single-storey extension to the north.
- This report outlines the findings of the PEA and PRA assessment and provides advice based upon the surveys' conclusions.
- During the PRA an external/internal inspection of the building was undertaken (where accessible).
- All areas could be accessed and evaluated for its roost potential and for evidence of bats.
- No evidence of nesting birds was found, but the remains of an old Wasp nest was located in the south west corner of the eaves in the loft space, along with an abundance of caterpillar chrysalis.
- Droppings were found; these belonged to House Mouse and Lesser White-toothed Shrew
- The habitat surrounding the proposed development suggests limited opportunity for bats to feed and to commute to and from, primarily due to the potential disturbance from street-lighting, the lack of connectivity to more preferred habitat and open habitat within close proximity of the development, particularly to the west.
- The house, both externally and internally presented with minimal features that bats may use as a roost.
- Therefore, the characteristics of the building and the surrounding habitat suggest negligible roost potential for bats.
- **The recommendations of this PEA and PRA suggest that no further surveys are recommended and there should be no further ecological constraints to the development proposals.**

1.0 Introduction

1.1 Survey and reporting

This report details the results of a preliminary ecological appraisal and a preliminary bat roost assessment of 7 Garrison Lane, Hugh Town, St Mary's, Isles of Scilly TR21 0JL. The survey, carried out on the 1st May 2019, was undertaken in order to inform proposals to convert the loft of the single-storey dwelling into two bedrooms, comprising two dormer windows with a north and south aspect. There are also plans for a single-storey extension to the north.

1.2 The application site

The house is located on the western side of Hugh Town, St Mary's (National Grid Reference SV9021110515, Figure 1.). The application site is comprised of a semi-detached, single-storey building with a north/south aspect with a small rear garden on all three sides (Photo 1). The footprint of the building is approximately 43m^2 and the sites total footprint approximately 132m^2 (red area, see Figure 1).

Figure 1. Location of 7 Garrison Lane 1

1.3 Details of proposed works

It is proposed to convert the loft of the single-storey dwelling into two bedrooms, comprising two dormer windows with a north and south aspect. There are also plans for a single-storey extension to the north.

2. Methodology

2.1 Preliminary Ecological Appraisal - Desk Study

A desk study data search was undertaken. This involved carrying out a review of the Local Records Centres (LRC) available records for bat species and publicly available datasets and citations of statutory designated sites of importance for nature conservation for sites within the zone of influence (ZOI) of the survey area (considered to be a maximum of 2km in this case). The desk study was also undertaken to identify habitats and features that are likely to be important for bats and assess their connectivity through the use of aerial photographs.

2.2 Preliminary Bat Roost Assessment

The Preliminary Bat Roost Assessment comprised a survey of the building for bats, signs of bats and features potentially suitable for use by roosting bats, and an assessment of the surrounding habitat in terms of its suitability for commuting and foraging bats.

The survey consisted of a ground based inspection and a detailed search of the interior and exterior of the building (from ground level), looking for bats and/or evidence of bats including droppings (on walls and windowsills and in roof and loft spaces), rub or scratch marks, staining at potential roosts and exit holes, live or dead bats and features, such as raised or missing tiles, potentially suitable for use by roosting bats. Binoculars, a ladder and a high-powered torch were used as required.

2.3 Classification of building

The building was classified according to its suitability for use by roosting bats. The classification was dependent on a number of factors including:

- Bats and/or signs of bats;
- External and internal features potentially suitable for use by roosting bats (e.g. raised or missing tiles, gaps behind fascia boards etc);
- Setting;
- Night time light levels;
- Disturbance levels;
- Proximity of suitable foraging habitat and commuting routes (e.g. ponds, streams, woodland, large gardens, hedgerows).

The categories used to classify buildings and the survey effort required to determine the presence or absence of bats (as per the Bat Conservation Trust's Bat Survey Guidelines[1], referred to by Natural England in their standing advice to planning officers) are described in Table 1 (see below).

2.4 Surveyor details

The survey was undertaken by Darren Mason BSc and Darren Hart BSc of the Isles of Scilly Wildlife Trust. Both have undertaken professional Bat Licence Training to permit him to undertake professional surveys and are currently gathering sufficient 'working hours' to achieve a Natural England Class Level 1 licence.

Table 1 – Description of the categories used to classify a building's bat roost potential and the survey effort required to determine the likely presence or absence of bats

	Roost status	Description	Survey effort required to determine the likely presence or absence of bats
Bat Roost Potential	High	Numerous features potentially suitable for use by roosting bats, optimal or good quality bat foraging habitat nearby and good habitat connectivity. Alternatively, a building with fewer features potentially suitable for use by roosting bats and optimal foraging habitat nearby.	Three dusk emergence and/or pre-dawn re-entry surveys between May and September. Optimum period May – August. Two surveys should be undertaken during the optimal period and at least one survey should be a pre-dawn survey.
	Moderate	More than a few features potentially suitable for use by roosting bats, good foraging habitat nearby and limited habitat connectivity. Alternatively, a building with a few features potentially suitable for use by roosting bats but optimal foraging habitat nearby.	Two or three dusk emergence and/or pre-dawn re-entry surveys between May and September (but only if features will be affected by the proposals).
	Low	Only a few features potentially suitable for use by roosting bats but good bat foraging habitat nearby. Alternatively, a building with more than a few features potentially suitable for use by roosting bats but sub-optimal foraging habitat nearby and limited habitat connectivity.	One or two dusk emergence and/or pre-dawn re-entry surveys between May and September (but only if features will be affected by the proposals).
	Negligible	Very few features potentially suitable for use by roosting bats and / or in an area (such as a densely populated urban area) which has limited habitat connectivity and poor foraging habitat.	No further surveys required.

Table 1. Categorising and classifying a building's bat roost potential

1 Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust

3. Results

Preliminary Ecological Appraisal

3.1 Pre-existing information on bat species

The desk study showed that no species of bat had previously been recorded within the building. A data search of LRC records for bats revealed information on 4 species of bat recorded within the 2km ZOI of the site. The species conclusively identified were Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Brown Long-eared Bat (*Plecotus* auritus) both UK Biodiversity Action Plan (BAP) priority species and the rare Nathusius Pipistrelle (*Pipistrellus nathusii*). Several bat roosts are known to exist within the 2km of the proposed development, but only 1 known roost within 500m of the property.

3.2 Statutory and non-statutory sites

In addition, the desk study revealed the presence of the following statutory designated sites within the 2Km ZOI of the site:

i.) **Peninnis Head SSSI –** Lying 722m south east of the proposed development is Peninnis Head SSSI. The site designated primarily for its maritime heathland, maritime grassland and scrub habitats together with good populations of a number of rare plant and lichen species, in addition to its significant quaternary geomorphology.

ii.) **Lower Moors SSSI –** Situated 784m due east of 7 Garrison lane lies Lower Moors SSSI. A topogenous mire that has a range of wetland habitats supporting a diverse range of wetland wildflower species, including the Nationally Scarce Tubular Water-dropwort (*Oenanthe fistulosa*). The site also holds locally important populations of Royal Fern (*Osmunda reglis*) and Southern Marsh Orchid (*Dactylhoriza praetermissa*) and is particularly important feeding for passage and wintering birds including Corncrake (*Crex crex*) and Spotted Crake (*Porzana porzana*).

iii.) **Higher Moors & Porth Hellick Pool SSSI –** 1.8km east north-east of the proposed development is Higher Moors SSSI. A topogenous mire designated for several rare and notable plant species)including; Bog pimpernel (*Anagallis tenella*), Star Sedge (*Carex echinata*) and Marsh St John's-wort (*Hypericum elodes*).

3.3 Habitats surrounding the application site

7 Garrison Lane lies within the Built-Up Areas Boundaries[2] (2011) for England and Wales published by the Office for National Statistics (Geography). The main conurbation of Hugh Town however, lies to the east of the application site. The street lighting throughout the town is intermittent and minimal, consisting of orange sodium lighting. Though intermittent, there is an increase in lighting to the west of the development site, on the lower slopes of the Garrison. Across this slope for approximately 100m are a scattering of properties of varying size and with some having gardens that contain mature shrubs, or low-level hedges. Between 100 and 200m west these properties become more scattered, with the gardens becoming larger and containing numerous shrubs and trees. Beyond 200m these properties back onto the Garrsion, an open expanse of grassland, heathland and scrub, with shelterbelts situated towards its southern and eastern ends. One hundred metres to the south is the beach of Porthcressa, with its rocky cliff-outcrops to the west and the allotments to the east with their mature hedgerows and cultivated plots a further 350m away. Further east, lies Buzza Hill, an area of open grassland and scrub and the old school site at Carn Thomas 550m away, which comprises small areas of grassland enclosed by small Elm (*Ulmus* sp.) copses. This habitat backs onto further hedgerow-enclosed allotments before reaching the wetland of Lower Moors. The habitat to the south-east is predominantly open, with many drystone walls surrounding improved pasture or the unimproved grassland at Penninis Head SSSI approximately 722m away.

In summary, the habitat surrounding the proposed development has limited opportunity for bats to commute and feed for the following reasons; the immediate habitat around the development provides no opportunity to feed and though the gardens of other houses immediately to the west provide better feeding conditions, to get to these bats would need to navigate around the street-lighting, which has been shown to negatively impact upon a bats commuting and foraging routes[3]. In contrast, it has been shown that species such as Common Pipistrelle will feed around street-lighting, to take advantage of the insectivorous prey that congregates around them. However, this has been shown to be dependent on the light emitting from the lamps, with orange sodium light (found here in this instance) having the greatest negative impact on feeding opportunities[4].

Though Soprano Pipistrelle has been shown to utilise more built up areas, compared to Common Pipistrelle[5] all species of bat require 'edge' habitat like hedgerows to both feed from and commute to other feeding areas[6, 7&8]. This type of habitat is limited to the west and quickly breaks down after approximately 200m, where the landscape becomes very open, which most species of bat prefer not to

utilise[9]. Furthermore, the preferred habitat for species such as Soprano and Nathusius Pipistrelle, which includes open bodies of water and watercourses [6,7&8] lies over 700m to the east. Though this could be reached utilising the 'strand-line' along the beach to the south, it has been shown that of all the pipistrelle species only Common Pipistrelle is known to use this as feeding habitat[10].

3.4 Habitats within the application site

7 Garrison Lane is a semi-detached property, with the adjacent property forming the western boundary. The remaining boundary of the proposed development site comprises a low stone-rendered wall with feather-edge board fencing sitting on top. Immediately outside the garden to the north-east is an LED streetlight with no cowl that emits 'white light' over the garden. The garden surrounds the northern, eastern and southern aspect of the property and is part laid to lawn (in the north and part of the east) and part laid to decking (remaining eastern aspect and south). The garden has no established shrub beds, but does have a variety of potted plants including European Olive (*Olea europaea*), Giant Viper's Bugloss (*Echium pininana*) and small raised vegetable and herb beds including Beetroot (*Beta vulgaris*), Lettuce (*Lactuca sativa*), Onion (*Apium cepa*), Marjoram (*Origanum majorana*) and Thyme (*Thymus vulgaris*). Against the northern boundary wall is a newly established bed with young, small plants including a variety of Primrose (*Primula sp.*) and Palm (*Arecaceae sp.*).

In summary, the habitat within the footprint of 7 Garrison Lane provides few species of shrub, or plant that currently attracts a wide variety of invertebrates which bats can feed on. This, in conjunction with the gardens open-nature and currently lack of structural diversity creates very limited foraging habitat.

Preliminary Roost Assessment

3.5 External

7 Garrison Lane is a semi-detached property, surrounded on three sides (north, south and east) by garden. The building comprises of a block built, rendered building with its main aspects facing north and south. The roof is open-gable ended, comprising of fibre cement tiles, with an approximate pitch of 43^0 with glazed clay capping and ridge tiles. The roof is in very good condition, with all tiles being well-fitted and no obvious loss of mortar around the capping and ridge tiles. All the windows and one of the two doors to the property, along with all the guttering, fascia, soffit boards, box ends and barge boards are uPVC, with

the remaining door being wooden. The fascia and soffit boards are very modern and well fitted. The house is tied into the adjacent property with lead flashing along the roof-line of the proposed development to the west. No chimney stacks were present.

Photo 1. North aspect

Photo 2. East aspect

The proposed development had very few features potentially suitable for roosting bats, primarily due to the well-fitting roof tiles and modern fascia, soffit boards and closed box ends. Those features identified included;

- Gap between adjacent property and lead flashing were the coaxial cable for the satellite dish enters the proposed development in the south-west corner of the eaves (see photo 3.)
- Gap between the end of the fascia and soffit board in the south-west corner between 7 Garrison Lane and the adjacent building (see photo 4.)

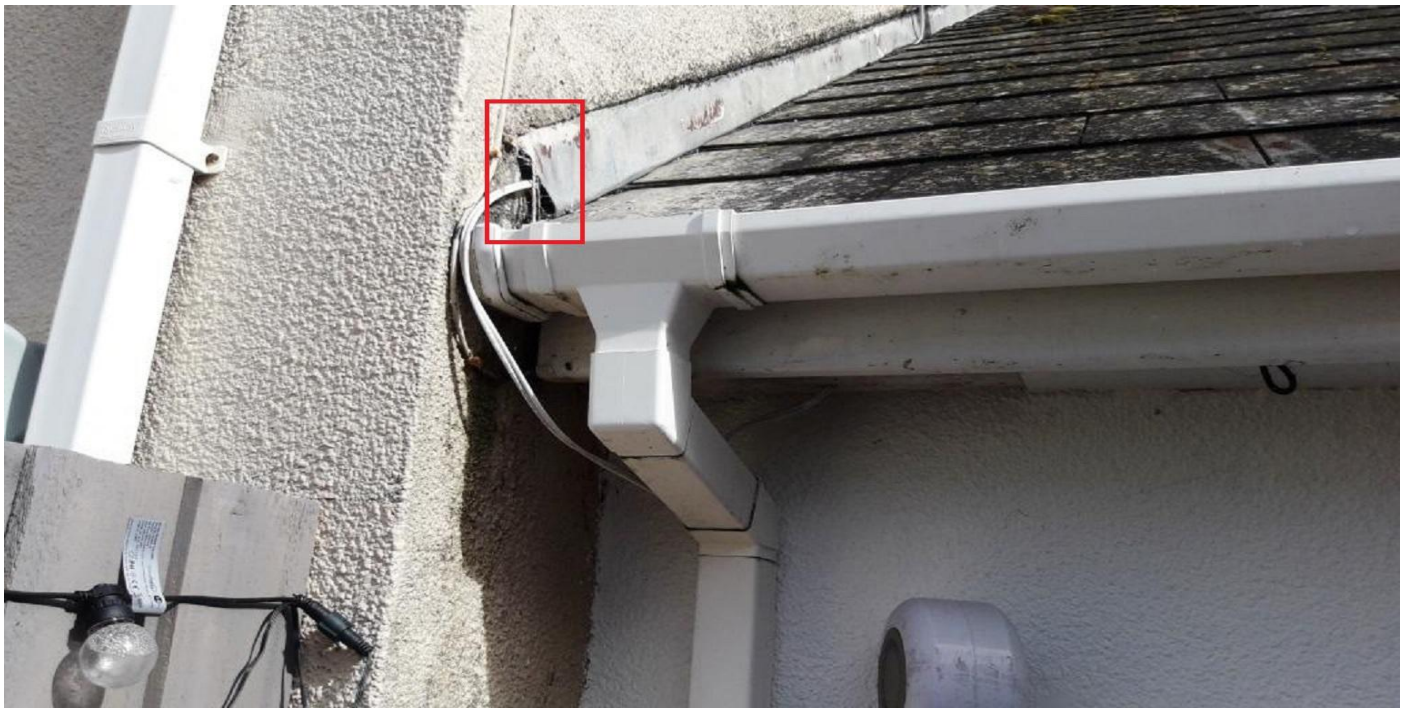

Photo 3. gap in lead flashing

photo 4. gap between soffit and building

close-up of gap

3.6 Internal

The roof-space of the proposed development appears to be of a king-post roof construction type, with braces and purlins (see photo 5.). The loft space was insulated, showing very little mammal activity, with only a single House Mouse (*Mus* musculus) dropping found around the loft hatch entrance (see photo 6.) and a single Lesser White-toothed Shrew (*Crocidura* suaveolens) found mid-way up the block buttress of the west facing wall (see photo 7.). The felt, though original was in very good condition with no rips, or tears and when all lights were turned off no obvious light was seen entering the loft space from any cracks in the soffit board, or roof tiles. However, several dead Common Wasp (*Vespula vulgaris*) cadavers were found on the buttress, along with the remnants of an old wasp nest in the south-west corner of the eaves, the same area identified externally at photo 4, creating a possible roost feature. The remainder of the loft space was free from debris, with occasional old cobwebs. Inspection of the roof joints revealed no obvious claw marks, or staining either.

Photo 5. roof construction and buttress

Photo 6. House mouse dropping 1

Photo 7. Lesser WT Shrew dropping 1

4. Evaluation of Results

4.1 Protected sites

The proposed development falls into the SSSI Impact Risk Zones of Lower Moors, Higher Moors & Porth Hellick Pool, Penninis Head SSIs. Impact zones are used in the assessment of planning applications for likely impacts on SSSI's, Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites (England). However, the impact in this zone is for large-scale residential developments and therefore the development is not likely to impact on the surrounding SSSIs.

4.2. Ecological features of importance

To identify which ecological features are important and which could potentially be affected by the proposed project, an evaluation of their importance for example; in a geographical context, degree of scarcity or level of protected status needs to be undertaken[15]. The table below outlines those features identified as important, the nature conservation legislation relevant to those features and an assessment of the level of impact from the proposed development on those features.

Ecological Feature	Relevant Legislation	Evaluation (of importance)	Mitigation Hierarchy	Impact Level
Habitats:				
Building (roost sites)	CHSR, W&CA	Negligible	A	Low
	Impacts: **Demolition:** – None predicted as long as Reasonable Avoidance Measures (RAM) are followed (see section 5) **Construction:** – None. **Operational impact:** - None predicted, as long as the features listed (see section 3.2.1) are avoided and not compromised. Please note a summary of criminal offences with respect to bats and their roosts. This can be found at: http://www.bats.org.uk/pages/bats_and_the_law.html			
Species:				
Bats	CHSR, W&CA	International	A, E	Low
	Impacts: **Demolition –** None predicted as long as Reasonable Avoidance Measures (RAM) are followed (see section 5) **Construction/post-construction –** None. Positive impact may result through enhancement by increased roost availability[16] **Operational impact:** - None predicted, however please note a summary of criminal offences with respect to bats and their roosts. This can be found at: http://www.bats.org.uk/pages/bats_and_the_law.html			
Key to Legislation and Mitigation Hierarchy				
CHSR – Conservation of Habitats and Species Regulations 2017[17] - http://www.legislation.gov.uk/uksi/2017/1012/made W&CA – Wildlife & Countryside Act 1981 (as amended)[13] - http://www.legislation.gov.uk/ukpga/1981/69/contents **A** – Avoid, **M** – Mitigate, **C** – Compensate, **E** - Enhancement				

Table 1.

5. Recommendations and Mitigation (bats)

The recommendations in this section are provided as information only and are the professional opinions of the author. Note; if building works are delayed for more than one year, then re-assessment may be required.

5.1 Further survey requirements

In the professional opinion of the author **no further surveys are required**. BCT guidance suggests that for buildings with negligible roost potential no further surveys are required. The survey carried out to date follows this guidance, is proportionate to the scale of the development and the information provided is believed to be sufficient to inform the planning decision.

5.2 EPS Licence requirement

For any development that is likely to commit an offence (or offences) in respect to a European Protected Species (EPS) i.e. bat, or their habitat, a licence will be required. In this instance based on sufficient survey work **no EPS licence is required**. If in the unlikely event a bat were found during the demolition phase of the project, Reasonable Avoidance Measures (RAM) must be followed and will determine any further action, such as licensing.

5.3 Mitigation – Further Action

As there is a low risk that bats may roost within the building (due to the identification of 1 small roost feature), prior to demolition, precautions should be taken to reduce the probability of committing an offence. If affected RAM should include:

Avoidance (A) - Bats

- **i.** Ensure all workers on site (including sub-contractors) are made familiar with bat legislation and agree to work in accordance with and fully follow best practice measures
- **ii.** Aim to carry out the work when the risk of disturbance is least likely to affect the main breeding season of bats (typically between 1st November and the 1st April inclusive).
- **iii.** Carry out careful checks of any cracks/crevices and cavities in or on the building prior to demolition. Signs of usage include; bat droppings, discoloration or polishing of access points where bats rub against them, urine stains and a lack of cobwebs, particularly if other crevices around them have plenty.

iv. Individual bats may be found in/under; cladding, between timber boards, between corrugated sheeting, in soffit boxes, behind lead flashing and sometimes just clinging to timber beams around joins as well as others areas. If any of these are removed, please do so carefully, lifting outwardly, and checking for bats continually. If in doubt, consult a licensed bat worker.

v. In the unlikely event that a bat is found please see below:

1. At no point should a worker handle a bat. Untrained handling may cause undue stress and injury to the bat, and if bitten may expose the worker to rabies-related European Bat Lyssavirus
2. Where possible replace any covering without damaging the bat, then halt works and contact **Natural England** (Tel: 0845 601 4523), or the **Bat Conservation Trust Helpline (**0845 1300 228), or **IoSWT** (01720 422153) for advice.
3. Any bats that go to ground should be covered with a box and left alone until a licensed bat worker arrives to assess the condition of the bat
4. If the bat attempts to fly at any point allow it to do so. Preventing natural behavior will cause unnecessary stress and may cause injury. Attempt to see where bat goes. If the bat returns to the building, halt works and report the escaped bat to the local bat worker

vi. Try to minimise any dust generated from demolition works from entering off-site buildings and gardens

Enhancement (E) – Bats

The Isles of Scilly have the most southern population of Common Pipistrelle (*Pipistrellus pipistrellus*) bats in the United Kingdom. Any loss of roosting, commuting or foraging sites could have a detrimental effect on this species distribution as a whole and cause a net loss in biodiversity on the islands. Each local planning authority in England and Wales has a statutory obligation under Part 3 Section 40 of the Natural Environment & Rural Communities Act 2006[18] (NERC 2006) to have due regard for biodiversity when carrying out their functions and must pursue sustainable development and a net gain in biodiversity set out under the guidelines in the National Planning Policy Framework 2018[19]. Therefore, this planning application should be permitted with the following being undertaken:

i. All new roofing felt laid to be traditional Type 2 bitumen felt, as modern breathable membranes have been shown to kill bats[20].

ii. Select 3 tiles on each roof aspect (6 in total) and raise their leading edge by 25mm (using mortar) to create a wedge shaped crevice that provides access to the underlying felt, to provide potential roost space

iii. Alternatively, Erect two free-standing bat boxes developed for crevice-dwelling species (see figure 2 for examples and Appendix D for supplier details) 1 under the canopy at the rear of the south-west extension and one at the top of the open gable end of the north-east elevation on the main house.

iv. Retain all vents and existing gaps in soffit boards as potential roost sites.

Figure 2. free-standing bat box examples

https://www.nhbs.com/browse/search?q=bat%20boxes&hPP=30&idx=titles&p=0&is_v=1&qtview=158636

https://www.nhbs.com/browse/search?q=bat+boxes&qtview=176916

6. Summary

It is believed that 7 Garrison Lane offers negligible roost potential and limited favourable foraging habitat immediately surrounding the development and has limited potential for linking with more favourable habitat, particularly to the west. In the professional opinion of the author **no further surveys are required and no EPS licence is required.**

If the recommendations given in this report regarding bats are adhered to, there should be no further ecological constraints to the proposal.

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