**BIODIVERSITY PROJECTS OFFICER’S REPORT**

**High Brown Fritillary Butterfly**

* The high brown fritillary is the UK’s rarest butterfly.
* Its preferred habitat is lowland heath and wood pasture – its population has declined by 66% since the 1970s due to changes in woodland management and the abandonment of marginal hill land which has been exacerbated by climate change and nitrogen deposition from the atmosphere.
* Thanks to a £750,000 award from the People’s Postcode Lottery a partnership, between the National Trust and Butterfly Conservation, is aiming to develop 60 hectares of such habitat on the Exmoor coast (Heddon Valley) in a bid to help the butterfly’s survival.
* The project will focus on restoring parts of the natural landscape along the Exmoor and North Devon coast to make it more suitable for the butterfly.
* Other wildlife, including the heath fritillary, nightjar and Dartford warbler will also benefit from the work.
* High brown fritillaries are also found on Dartmoor, in South Lakeland, Cumbria and at Morecambe Bay, Lancashire.

**RSPB ends its involvement in the Peak District Bird of Prey Initiative**

* The RSPB has ended its involvement with the Peak District Bird of Prey Initiative, following the partnership projects continued failure to improve the prospects of raptors in the Dark Peak.
* The initiative, involving five land management and conservation organisations, was established in 2011 to help increase breeding success and reduce illegal persecution of merlin, peregrine, short-eared owl, hen harrier and goshawk.
* The initiative failed to meet any of its targets and some species continued to decline. For example no peregrines successfully bred in the Dark Peak during 2017; the first time this has happened since 1984.
* The RSPB believe that the main problem is the continued illegal persecution through shooting, trapping and poisoning.

**Marine Snails Repair Shell Damage from Ocean Acidification**

* Research by the British Antarctic Survey has shown that sea butterflies (tiny marine snails) can repair damage caused by ocean acidification.
* Ocean acidification occurs due to the fact that the oceans absorb around 25% of all carbon dioxide emitted in to the atmosphere. This carbon dioxide then causes the pH of the oceans to fall, which could dissolve the shells or skeletons of ocean creatures.
* The shells of sea butterflies are made from aragonite, which is the least stable form of calcium carbonate. Their shells are so thin that they are translucent.
* Research has revealed that sea butterflies have adapted and protect their shells from the corrosive waters with an impermeable membrane in conjunction with the ability to repair their shells by making new calcium carbonate to patch themselves up from the inside which makes them less vulnerable than previously thought.

**Thermal Imaging shows how Animals Respond to Environmental Change**

* Research by the University of Glasgow has shown that environmental stresses can result in temperature changes in animals, which can be measured using thermal imaging rather than capture.
* The research studied blue tits in poor conditions and in birds with higher levels of stress hormones in their blood streams. They found that the skin temperature of such birds was lower around the eyes, which was accurately measured using thermal imaging.
* This technique works as animals need to save energy in poor conditions (such as adverse weather or when food is scarce) and they can do this by reducing heat production. Similarly, challenging conditions trigger a stress response which alters blood flow and diverts it to the areas with the greatest need, thereby increasing the core body temperature and reducing surface temperature.

**Salmon in UK Chalk Streams are Genetically Unique**

* The University of Exeter and the Game and Wildlife Conservation Trust has shown that Atlantic salmon (*Salmo salar*) found in chalk stream in southern England are genetically unique as their genes are distinctly different from others of the species.
* The research found distinct differences between chalk and non-chalk salmon but little genetic differentiation within chalk-stream populations.
* Classifying chalk-stream salmon as a separate sub-species could make it easier to protect them.

**Local Nature Reserve (LNRs) and Open Spaces**

A range of projects have taken place at the LNRs and open spaces:

* Applications, to be re-awarded Green Flag Awards at The Aquadrome, Chorleywood House Estate and Leavesden Country Park, were submitted earlier in the year. Leavesden Country Park and Chorleywood House Estate will have full site visits by Green Flag judges whilst the Aquadrome will be subject to a mystery shopper visit.
* There are eight categories upon which parks and open spaces are assessed. The site must, for example, be welcoming, safe and secure, clean and well maintained, sustainably managed, have community involvement and be well managed.
* For more information go to:

[www.keepbritaintidy.org/GreenFlag](http://www.keepbritaintidy.org/GreenFlag)

* New, five year management plans, are in the process of being drawn up for the Aquadrome, Oxhey Woods and Chorleywood House Estate.
* The new management plans will be consulted upon and ready to be fully implemented in April, at the start of the new financial year.
* Natural England has given the Council some additional funding to aid scrub removal in the wetter area of Croxley Common Moor, towards the western end of the site. The works were 100% funded by Natural England and were completed in February.
* The cattle are due to return to Croxley Common Moor in April. They will, again, be Herefords crossed with Charolais which were very placid last year.
* The Friends of Croxley Common Moor are due to start their spring/summer programme of tasks in April; meeting at 10am on the second Sunday of each month. There will be a spring clean and ragwort removal sessions as well as a varied range of walks and talks, including a bird walk in May and bat walk in August.
* For more information about the work of the Friends and the upcoming events at Croxley Common Moor visit:

[www.croxleycommonmoor.org.uk](http://www.croxleycommonmoor.org.uk)

* The cattle are due to return to Chorleywood House Estate around June. The fencing around The Dell and Dell Field will be repaired/replaced so that grazing can take place in these fields again (after an absence last year) as well as the field behind The Readings.
* TRDC has been working with the Countryside Management Service (CMS) to put together a new management plan for Chorleywood House Estate. The new plan will start in April 2018 and will include projects such as improving signage, updating the interpretation boards and increasing the amount of information on the heritage of the site.
* Following on from the enhancements that have taken place to the River Colne at The Withey Beds the Environment Agency has restocked the river Colne with silver fish.
* Dexter cattle will soon be back to graze The Withey Beds. This will be the third year that they have been at the site and you can already see an improvement in the quality of the grassland.
* Various family activities have been organised by the Council’s Park Ranger. Activities have included welly walks, bug hunts and bat walks. For information on all of the upcoming events go to:

<http://www.threerivers.gov.uk/egcl-page/events-community-groups-and-volunteering>