

# Cairngorms Climate Conference – Net Zero with Nature

**Dr Pete Mayhew**  
Cairngorms National Park Authority

**#NetZeroCairngorms**

[www.cairngorms.co.uk](http://www.cairngorms.co.uk)



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Pàirc Nàiseanta a' Mhonaidh Ruaidh

# Tackling the climate emergency together in the Cairngorms National Park

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Jakub Iwanicki/VisitScotland

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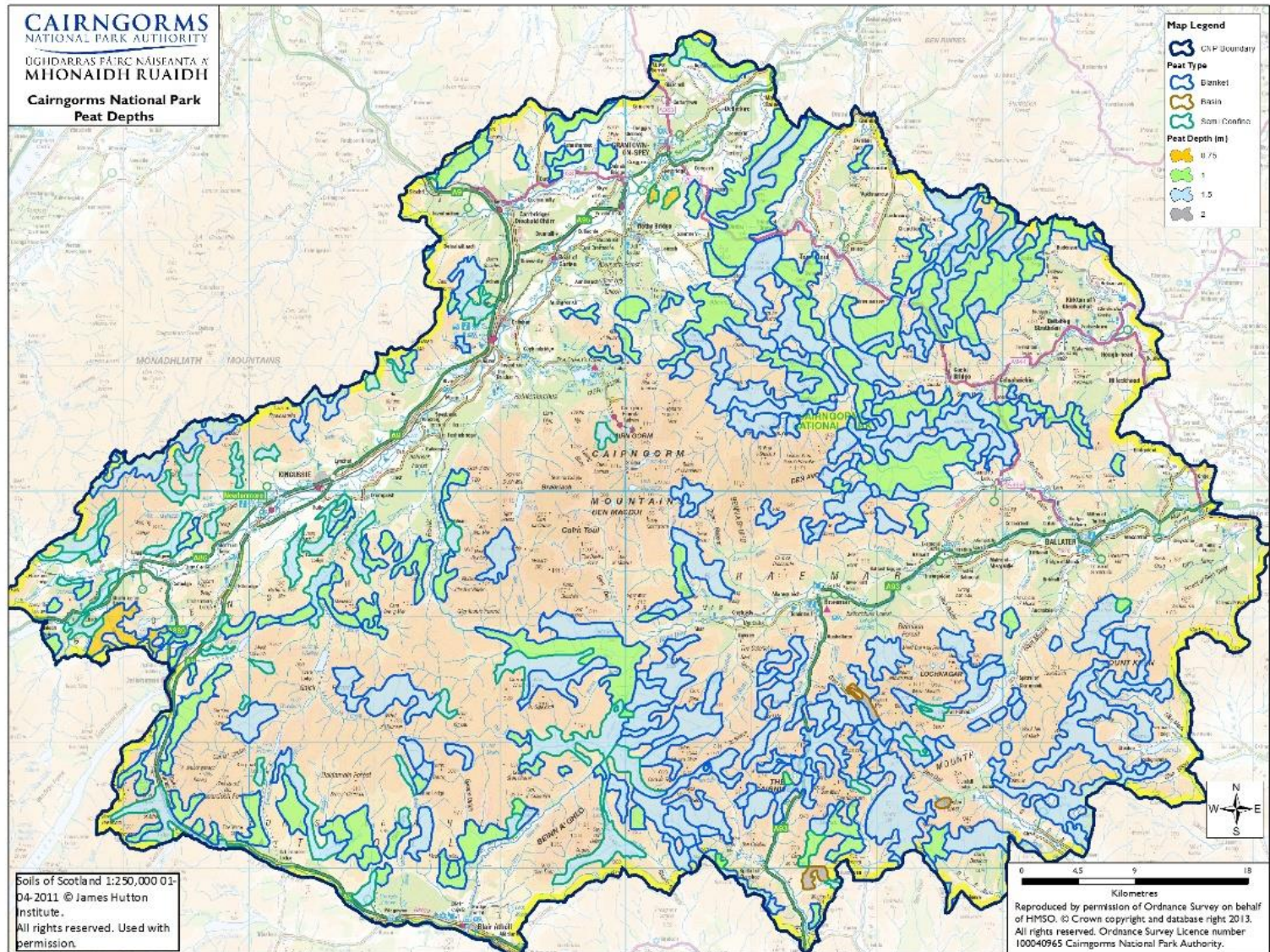


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Cairngorms National Park  
Peat Depths



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 Scottish Natural Heritage  
 Dualchas Nàdar na h-Alba  
**Peatland ACTION** Restoring Scotland's peatlands

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Mark Hamblin/2020VISION/CNPA





Jane Hope

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David Gowans

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Newsline Media

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Ian Francis





Damian Shields/VisitScotland





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River Dee Trust



Linda Pitkin/2020VISION









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## Blair Castle Hydro Electric Power Station

Electricity was brought to Blair Castle in 1908, by harnessing the water which had once powered the old sawmill (1850) at Blairuachdar ③. The water flowed down a 400mm diameter pipe to a 75kW hydro electric plant located in this powerhouse in front of you ⑥. A pond had been constructed in 1840 to provide water storage for the sawmill and in 1907 the catchment was extended by digging a 3.5 kilometre hill drain which fed two new larger ponds. Electricity was used solely for electric light (plus the odd toaster or hotplate) so the storage of water, (the ponds), were designed to have enough capacity to deliver enough water to generate hydro electricity for about 6 hours, and to refill in the following 18 hours. With the arrival of the National Grid in 1951, the scheme was decommissioned and the original three 25 kW Gilkes turbines were sold for scrap.

In 2014 the scheme was re-commissioned, the original pipe was tested and found to be in good order, the hill drain was cleaned out, a new intake has been constructed at the lower pond, and the existing powerhouse has been refurbished with a new Gilkes 84kW turbine, which, (as long as it has been raining), will provide all the electricity needed for the castle. At full design flow 331,200 litres of water per hour will pass through the turbine. In the case of extreme loads (a winter wedding, a big winter function) power will be supplemented by the National Grid. During low castle electricity demand periods, power will be exported (sold) to the National Grid.

The Coanda screen was invented by Henri Coanda (1886-1973) a world renowned Romanian engineer.

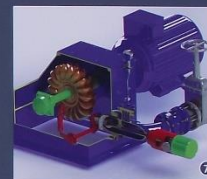
After 1951 the powerhouse became first, dog kennels then an antler and skulls store, and finally a fire fighting equipment and fire training building.

Small traces of camouflage paint were found on the powerhouse brickwork which is why it has been re-camouflaged, with technical help from the Royal Army Museum and Roland Penrose's Home Guard manual of Camouflage.

Many of the skulls and antlers were found in the peat.

**Atholl  
Estates**

Since 2009 Atholl Estates have commissioned six run of river hydro schemes with a total capacity of 3.43MW, providing enough power for 2500 households.



- ① A 4.48 kilometre long drain first dug in 1907, along the contour of the hill, which collects water from burns and the natural water run off the hill. The drain was cleared in 2013.
- ② The drain delivers water to the Upper Pond
- ③ Lower Pond where the water is passed through a Coanda (wire screen) and enters the penstock (pipeline).
- ④ Penstock. A 400 mm diameter pipe, made of steel, laid in 1908 and re-commissioned in 2014, with new fittings in the powerhouse and two new air valves on the line. The penstock is 2060 metres long and falls 126 metres – giving 12.4 bar of pressure.
- ⑤ Air valves
- ⑥ Powerhouse built in 1908, de-commissioned in 1951, refurbished with a new 84 kW Gilkes single jet Pelton turbine in 2014.
- ⑦ The Gilkes Pelton turbine - a pressurised water stream enters through a single spear valve at 12.4 bar pressure, the water spins the runner which turns the generator to make electricity.

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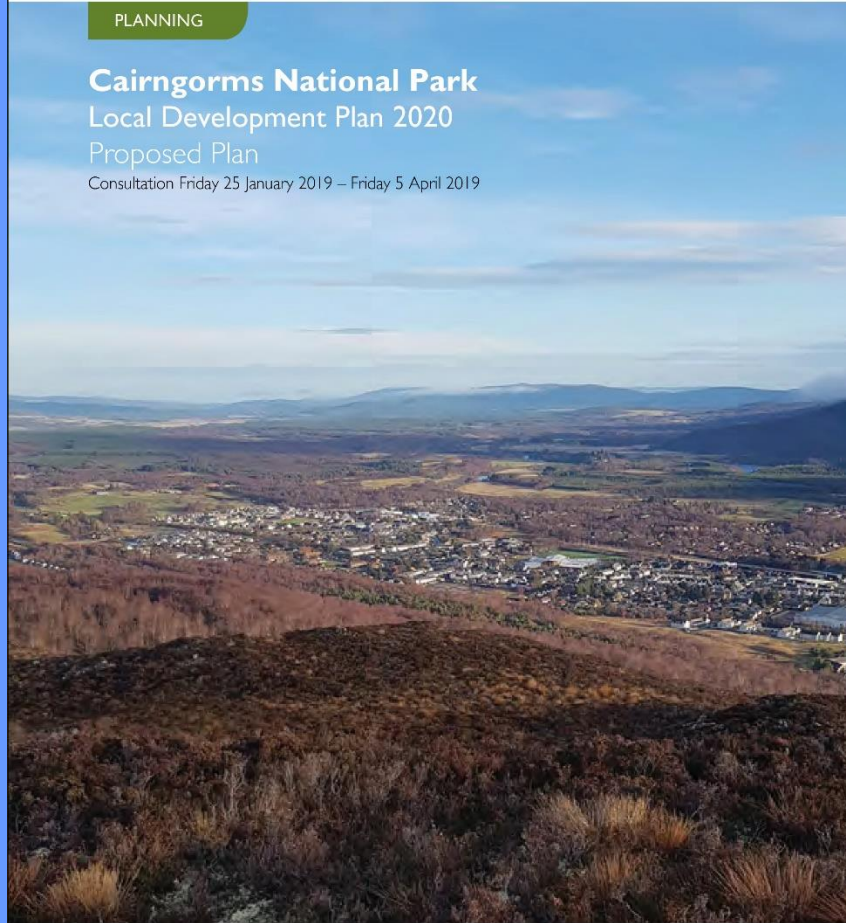
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PLANNING

## Cairngorms National Park Local Development Plan 2020 Proposed Plan

Consultation Friday 25 January 2019 – Friday 5 April 2019







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