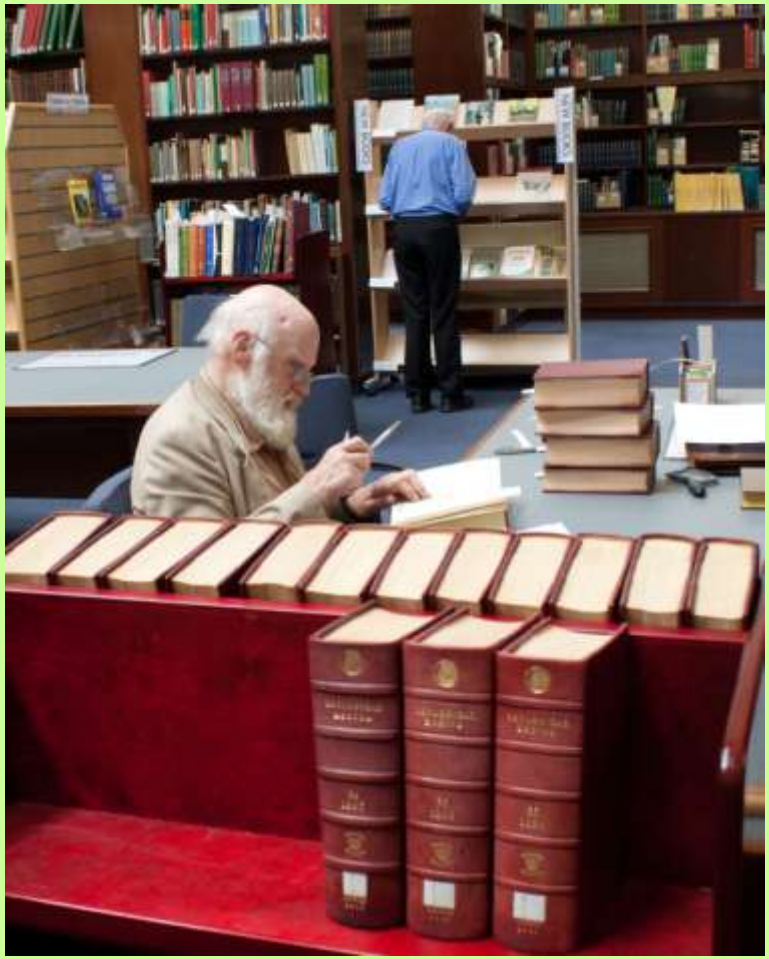
Introductions

My friend Eric Hollowday

World authority on rotifera – aquatic semi-microscopic invertebrate.



Eric’s one regret?

It’s never too late……..
whatever your interest.

Butterflies, their life-cycle and how we can support and enjoy them

Tom Dunbar
Butterfly Conservation

Some Serious Statements on Biodiversity

•The biodiversity of life on earth provides us with food, fuel, medicines and other vital services (Ban Ki Moon, 2010)

•There is no substitute for the resources biodiversity provides and its loss cannot be reversed on a timescales that would be of use to society (Erlick & Erlich, 1992)

•“The ravaging of biodiversity is the most serious single environmental peril facing civilization” (Erlich & Erlich, 1992)

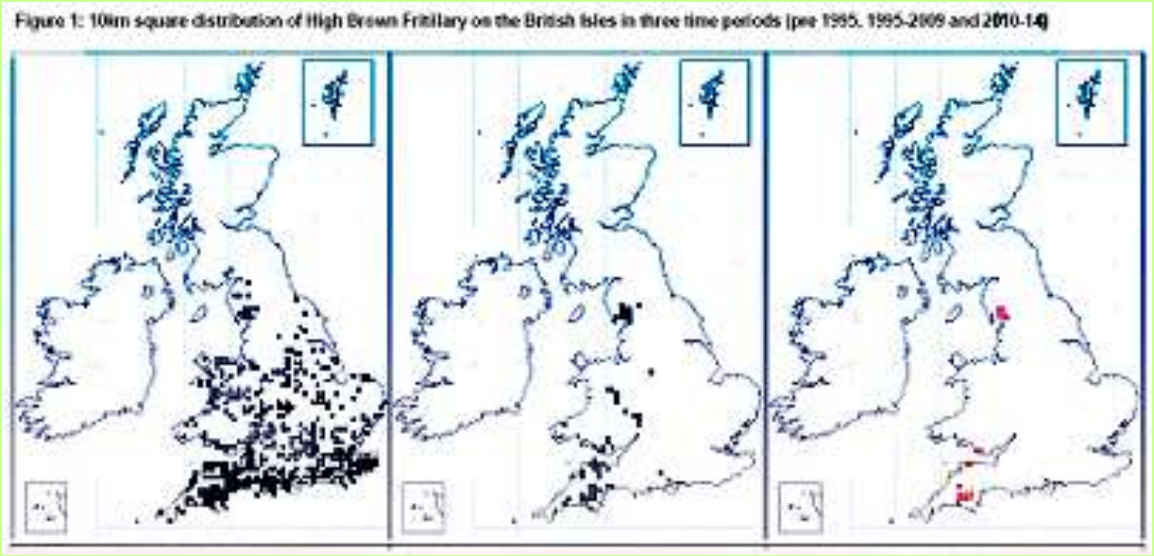
A Recent Report "*The State of the UK's Butterflies 2015" states:*

- "Overall the situation is stark. Most butterflies have decreased since the 1970s and an alarming number of common species have declined severely."

– *Richard Fox (Butterfly Conservation)*

Loss of butterflies is a clear message

- Butterflies are highly sensitive to losses of biodiversity.
- Measurements of changes in butterfly populations warns us of these losses.



Pre-1995 1996-2010 2011-2014

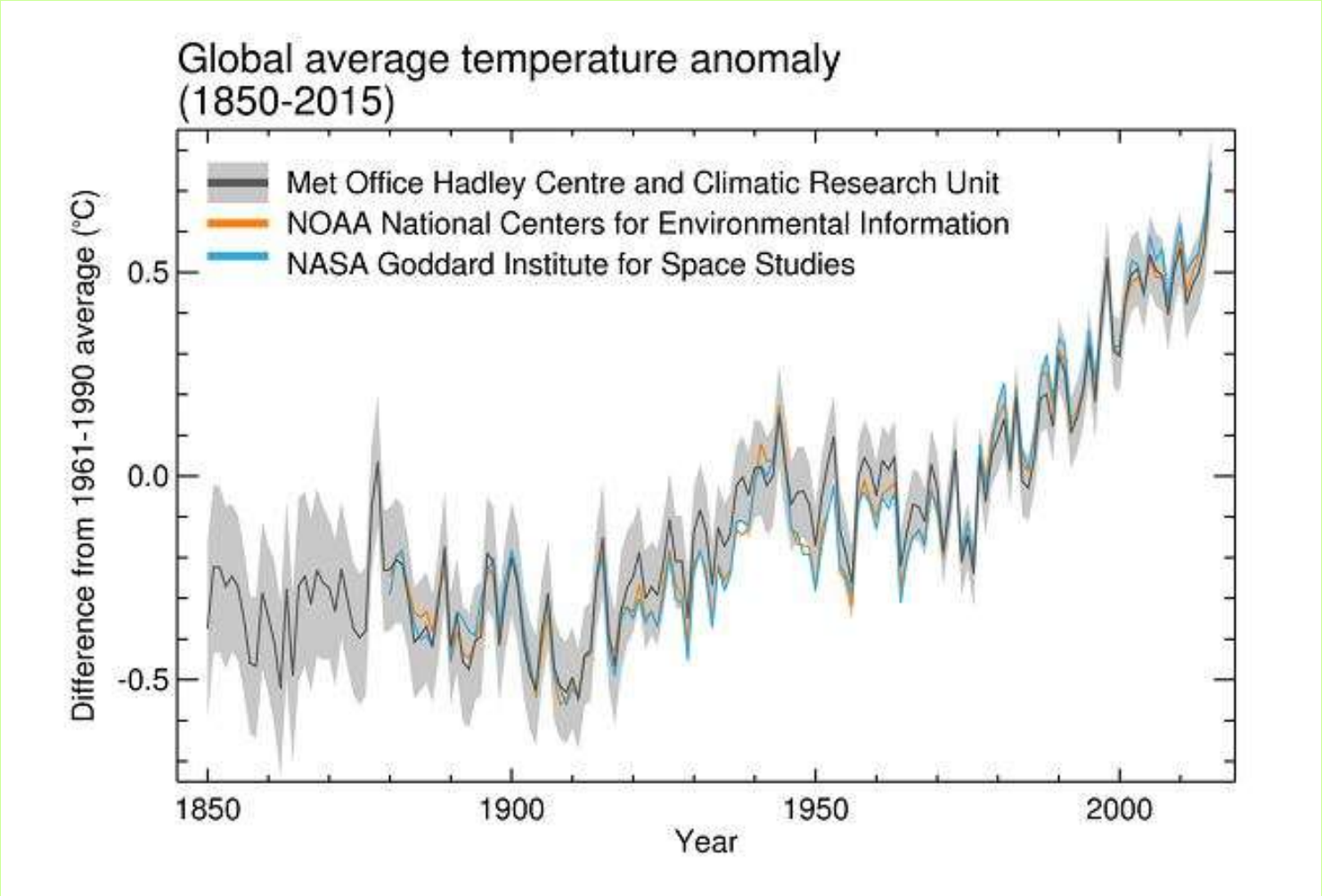
10 Km Square distribution changes of High Brown Fritillary 2009-2014

Human behaviour has a major negative impact on our planet:

- modern farming practices
- industrialisation and other man-made pollution over recent centuries
- modern life-styles changes e.g. consumerism
- urbanisation leading to fragmentation of the countryside
- our excessive use of fossil fuels causes worrying changes to the World' climate

We ignore the warning signs at our peril!

Climate Warming



http://www.metoffice.gov.uk/climate-guide/science/temp-records

A load of pants or not?

What occurred over the last decade 2006 to 2016?!

Illustration from Dave Wainwright

Let’s look at a simple butterfly classification method.

Number of species of butterfly?

UK: 59

Northwest: 34

In this talk we will focus on the species in our region.

One method to classify butterflies:

- Habitat Generalists

Peacock

and

Northern Brown Argus

- Habitat Specialists

Butterfly Classification

- Generalists species:
  - very mobile, adults free-ranging
  - can use a wider range of habitats, nectar sources
  - e.g. Peacock, Large White, Red Admiral, Orange Tip etc

Butterfly Classification

- Habitat Specialists:
  - localised colonies where specific requirements are met for them to thrive
  - very specific requirements for each species

    e.g. Scotch Argus, High Brown, Dark Green and other Fritillaries

The majority of butterfly species are specialists and are the most threatened by extinction.

However some species have increased their range.

Generalist species

are more likely to visit your garden.

That’s the serious stuff

Study of butterflies can be enjoyable too?

Let’s look at some life-stages next.

Butterfly Life-stages

- Egg (ovum) – locations vary by species
- Caterpillar (larva) – growth stage
- Chrysalis (pupa) – metamorphosis stage
- Adult (imago) - breeding stage

Comma life stages

Egg-phase not shown here

Food dependency occurs at the caterpillar stage

- they are dependent on specific food plants
- caterpillars' task is simply to feed and grow
- all butterfly growth takes place at this stage

A good habitat has a wide diversity of suitable larval food plants.

Life-cycle of Small Tortoiseshell - a wider countryside species

A wonderful video coming up

SmallTortEdit4.mp4

Let’s look at the plant list that caterpillars require.

The next 5 slides indicate the wide range of butterfly dependent plants

- a quick tour

Caterpillar Food Plants

Common Name	Primary Food Plant For:	Secondary Food Plant For:
Alder Buckthorn	Brimstone	
Bents (various)	Gatekeeper Meadow Brown Small Heath Wall	
Bilberry	Green Hairstreak	
Birds Foot Trefoil	Common Blue Dingy Skipper Green Hairstreak	Clouded Yellow
Black Medick		Common Blue
Blue Moor Grass	Scotch Argus	
Bramble		Green Hairstreak Holly Blue
Bristle Bent	Grayling	
Broad-leaved Dock		Small Copper
Broom	Green Hairstreak	
Buckthorn	Brimstone	Green Hairstreak
Charlock	Green-veined White	Orange-tip Small White
Cock's-foot	Large Skipper Meadow Brown Ringlet Speckled Wood Wall	Small Skipper
Common Cotton grass		Large Heath
Common Couch	Ringlet Speckled Wood	Gatekeeper
Common Dog-violet	Dark Green Frit Pearl-bordered Fritillary Small Pearl-bordered Frit High Brown Frit Silver-washed Frit	
Common Nettle	Comma Red Admiral Peacock Small Tortoiseshell	Painted Lady
Common Rest harrow		Common Blue
Common Rock-rose	Green Hairstreak Northern Brown Argus	

Caterpillar Food Plants

Common Name	Primary Food Plant For:	Secondary Food Plant For:
Common Sorrel	Small Copper	
Cowslip	Duke of Burgundy	
Creeping Soft-grass		Small Skipper
Crucifers (various)	Large White Small White	Green-veined White
Cuckooflower	Green-veined White Orange-tip	
Currants (various)		Comma
Devil's-bit Scabious	Marsh Fritillary	
Dogwood		Green Hairstreak
Dogwoods (various)		Holly Blue
Downy Oat-grass	Meadow Brown	
Dyer's Greenweed	Green Hairstreak	
Early Hair-grass	Grayling	
Elms (various)		Comma
English Elm	White-letter Hairstreak	
Evergreen Oak		Purple Hairstreak
False Brome	Meadow Brown Ringlet Speckled Wood Wall	Large Skipper Small Skipper
Fescues (various)	Gatekeeper Meadow Brown Small Heath	
Field Scabious		Marsh Fritillary
Garlic Mustard	Green-veined White Orange-tip	Small White
Gorse	Green Hairstreak	
Gorses (various)		Holly Blue
Greater Bird's-foot Trefoil		Common Blue Dingy Skipper

Caterpillar Food Plants

Common Name	Primary Food Plant For:	Secondary Food Plant For
Hairy Rock-cress		Orange-tip
Hairy Violet	Dark Green Fritillary High Brown Fritillary	
Hare's-tail Cotton grass	Large Heath	
Heath Dog-violet		High Brown Frit Pearl-bordered Frit
Hedge Mustard	Green-veined White	Orange-ti Small White
Hoary Cress		Small White
Holly	Holly Blue	
Hop		Comma Peacock Red Admiral
Horseshoe Vetch		Dingy Skipper
Ivy	Holly Blue	
Jointed Rush		Large Heath
Kidney Vetch	Small Blue	
Large Bitter-cress	Green-veined White	Orange-tip
Lesser Trefoil		Common Blue
Mallows (various)		Painted Lady
Marram		Grayling
Marsh Violet	Dark Green Fritillary Small Pearl-bordered Frit	Pearl-bordered Fritillary
Mat-grass	Mountain Ringlet	
Meadow Foxtail		Small Skipper

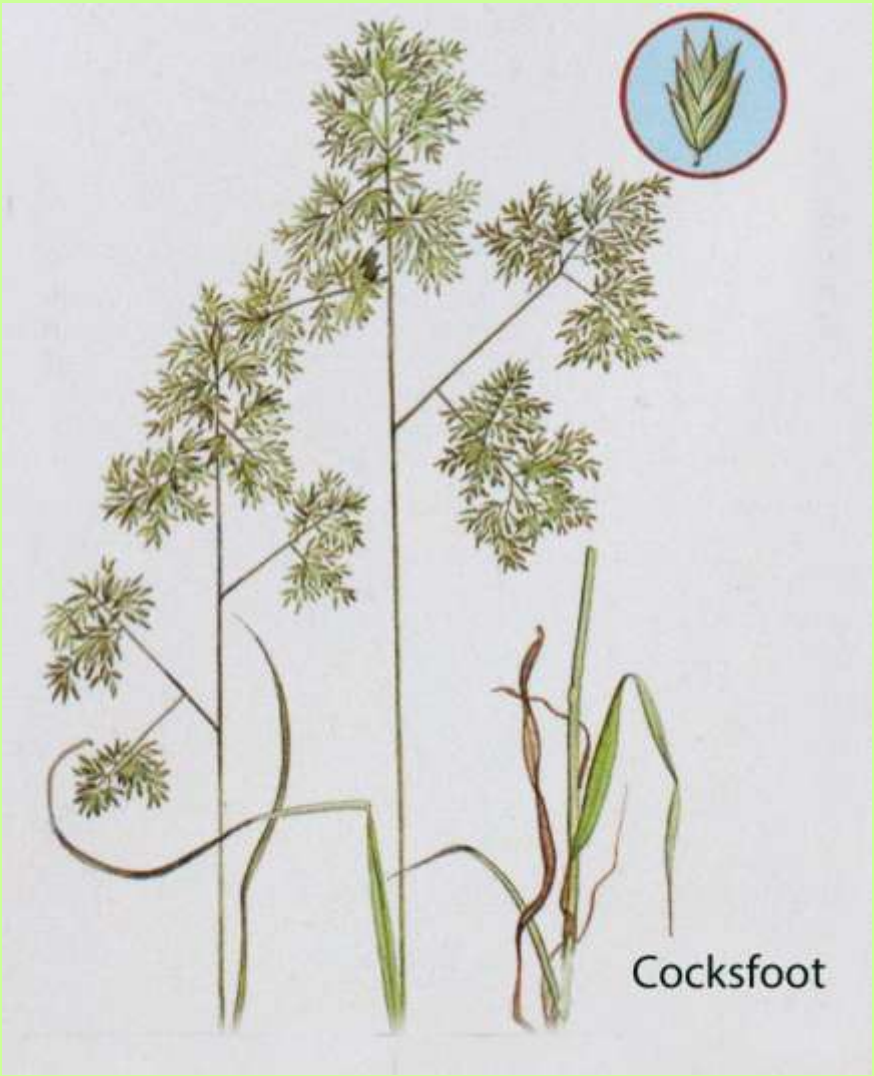
Caterpillar Food Plants

Common Name	Primary Food Plant For:	Secondary Food Plant For
Meadow-grasses (various)	Gatekeeper Meadow Brown Ringlet Small Heath	
Nasturtium	Small White	Green-veined White Large White
Pale Dog-violet		High Brown Fritillary
Pedunculate Oak	Purple Hairstreak	
Primrose	Duke of Burgundy	
Purple Moor-grass	Scotch Argus	Large Skipper
Red Fescue	Grayling	
Sessile Oak	Purple Hairstreak	
Sheep's Sorrel	Small Copper	
Sheep's-fescue	Grayling	
Small Nettle	Small Tortoiseshell	Peacock Red Admiral
Small Scabious		Marsh Fritillary
Small-leaved Elm	White-letter Hairstreak	
Snowberries (various)		Holly Blue
Spindle		Holly Blue
Thistles	Painted Lady	
Timothy		Small Skipper
Tor-grass	Wall	Large Skipper
Tufted Hair-grass	Ringlet	Grayling
Turkey Oak	Purple Hairstreak	
Turnip		Orange-tip

Caterpillar Food Plants

Common Name	Primary Food Plant For:	Secondary Food Plant For:
Viper's-bugloss		Painted Lady
Water-cress	Green-veined White	
Wavy Hair-grass	Wall	
White Clover		Common Blue
Wild Cabbage	Green-veined White	Small White
Wild Mignonette		Large White Small White
Wild Radish	Green-veined White	
Winter-cress		Orange-tip
Wood Small-reed		Large Skipper
Wych Elm	White-letter Hairstreak	
Yorkshire-fog	Small Skipper Speckled Wood Wall	

Examples of butterfly friendly finer grasses



Not butterfly-friendly

Addition of the finer grasses will attract several butterfly species.

You might add Birdsfoot trefoil or other eco-friendly plants to your lawn?

Rye Grass can become dominant in your lawn and out-compete other grasses and plants.

The Fairfield Association are our hosts this evening.

Summary information on their Nature Reserve at Fairfield follows:

The Fairfield Nature Reserve

- The reserve is part of a larger partnership - the Morecambe Bay Nature Improvement Area (NIA).

- That enables the Association to apply for funding for the Reserve's development under national and local nature improvement schemes.

Further information go to:

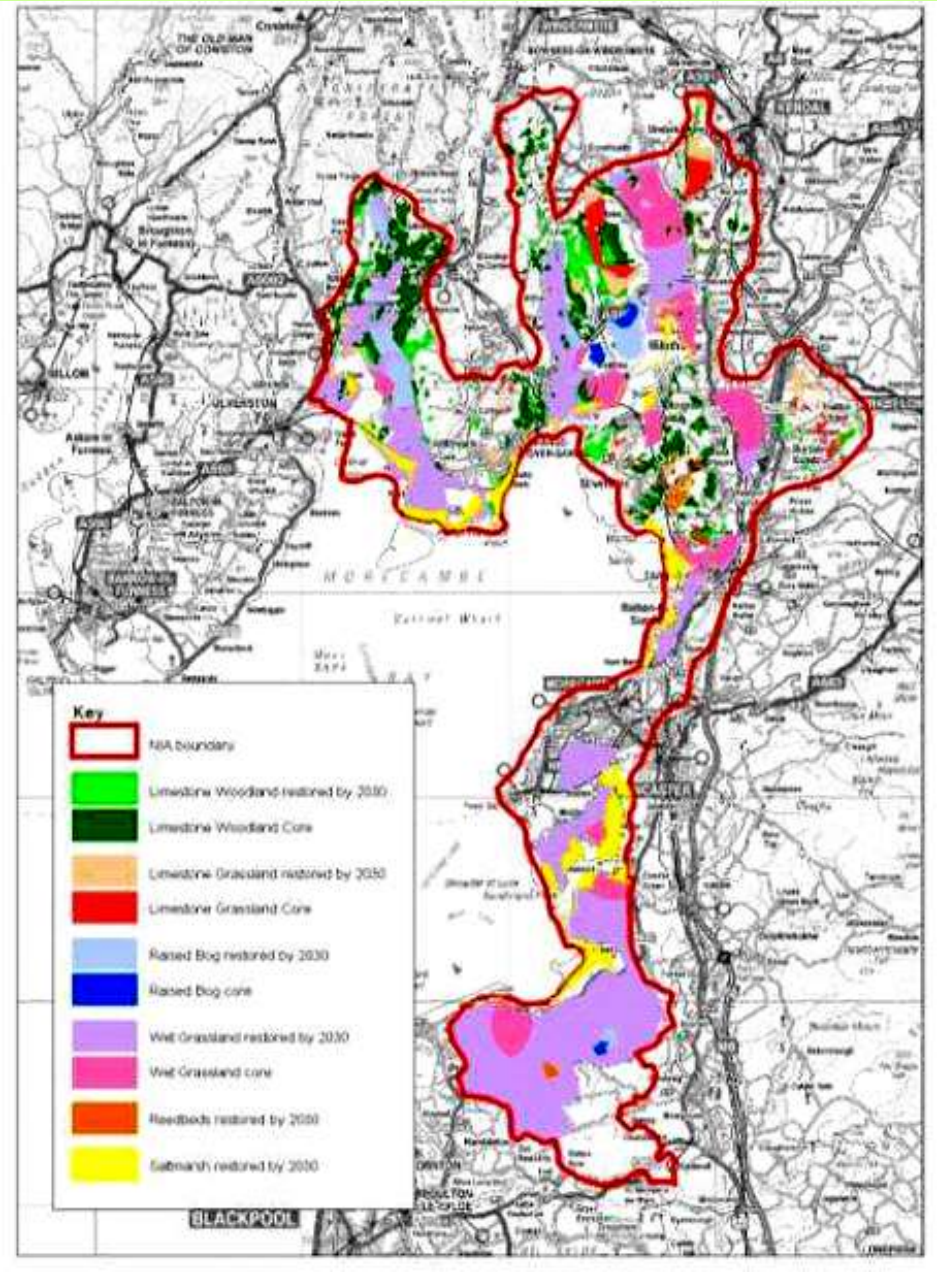
http://www.fairfieldassociation.org/ourprojects.html

Where is Fairfield Nature Reserve Located?

Location


Royal Lancaster Infirmary
Lucy Brook
Fairfield Nature Reserve
Ashton Rd
Google
Imagery ©2016 DigitalGlobe, Getmapping plc, Map data ©2016 Google
Terms

Morecambe Bay Limestones and Wetland Nature Improvement Area (NIA)



Morecambe Bay Limestones and Wetland Nature Improvement Area (NIA)

Aims to work with

- landowners and local businesses, communities, for wildlife benefit.
- manages priority habitats
- attempts to connect and create habitat stepping stone patches across the landscape
- works within the planning system
- aims to connect people to nature

How are we doing at Fairfield?

- The following slide is an extract from the Higher Level Stewardship planning document (HLS)

- gives you an idea of the planning work involved by the committee and other partners (NIA, Natural England)

- The reserve helps improve a range of habitats for many forms of wildlife - and the human kind too.

Is that a win-win situation for the community?

HLS - a diverse range of butterfly foodplants required? (Extract from HLS Management Plan & Guidance)

HC8 - Restoration of woodland

Indicators of Success

desirable woodland flora: **bluebell**, **primrose**, **ramsons, wood anemone** and wood sorrel

HE10 - Floristically enhanced grass margin

Indicators of Success

- desirable grass species **crested dog's-tail, small leaved timothy, smooth meadowgrass, red fescue and common bent.**
- wildflower to include yarrow, oxeye daisy, meadow vetchling, red clover, **common bird's-foot trefoil**, ribwort plantain, **black knapweed**. red clover (late flowering variety; red clover (early flowering variety); **commom vetch**; Black Medick; Tufted vetch; **meadow vetchling**
- By year 8, none of the following undesirable species: **common nettle**, curled dock, **broad-leaved dock, spear thistle**, **creeping thistle**, **common ragwort** and sycamore) should be more than occasional.

HK7 - Restoration of species-rich, semi-natural grassland

Indicators of Success

· By year 5, at least 4 high-value indicator species **bird's-foot-trefoil, meadow vetchling, rough hawkbit, black knapweed**, bedstraw, meadowsweet, **yellow rattle** should be frequent.

*www.**fairfield**association.org/blog/.../**Fairfield**Meadow**Survey**_2015.pdf*

Fairfield Butterfly Survey
at Fairfield
2015

A survey by Christine Bennett

Christine Bennett's Sightings

Date	Species	No
17 July - 9 Aug	Comma	1
17 July - 9 Aug	Gatekeeper	2
17 July - 9 Aug	Large Skipper	10
17 July - 9 Aug	Meadow Brown	53
17 July - 9 Aug	Small White	5
07/09/2015	Meadow Brown	1
28/09/2015	Peacock	1
28/09/2015	Red Admiral	1
28/09/2015	Silver Y moth	1
28/09/2015	Small Tortoiseshell	5
07/09/2015	Speckled Wood	3
13/09/2015	Speckled Wood	3
28/09/2015	Speckled Wood	5
30/09/2015	Speckled Wood	1

Butterflies recorded by Christine at Fairfield 2015

How many can you identify?

Possible Butterfly Species at Fairfield			
Species	**Status**	**Larval foodplant**	**Comment**
Small Skipper		Mainly Yorkshire-fog	New resident in NW
Large Skipper	Present	Mainly Cock's-foot	Various habitats including urban
Clouded Yellow		Clovers; Lucerne; Birds-foot- trefoil	Occasional migrant
Brimstone		Buckthorn	Hibernates as adult
Large White		Brassica (cabbage, B. Sprouts etc)	Very likely
Small White		Cultivated brassica; Hedge Mustard, Garlic mustard, Hoary cress	Very likely
Green Veined White		Garlic Mustard, Cuckooflower, Hedge Mustard etc	Likes damp, lush vegetation
Orange Tip		Cuckooflower, Garlic Mustard etc	Spring. Eggs easily located
Small Copper		Common Sorrel, Sheep's Sorrel, Broad-leaved Dock (occasionally)	Sightings unpredictable
Common Blue		Birds-foot-trefoil, Black Medick, White Clover	Grassy place if food plant present
Holly Blue		Holly/Ivy	Spring and Summer
Red Admiral	Present	Nettle, Hop	Can be abundant
Painted Lady		Thistles	Migrant, some years in abundance
Small Tortoiseshell	Present	Nettle	Hibernates as adult
Peacock	Present	Nettle	Hibernates as adult
Comma	Present	Nettle, Hop	Hibernates as adult
Speckled Wood	Present	Various grasses	Spring through to Autumn
Gatekeeper	Present	Fine grasses, bents etc	High summer
Meadow Brown	Present	Various grasses	High summer
Ringlet		Coarser grasses	Likes damp habitat

Other species you might see at Fairfield












Rare specialist species further afield in our area of the UK

Mountain Ringlet

Northern Brown Argus High Brown Frit DG Fritillary

Large Heath Pearl Bordered Fritillary

Wall Brown Duke of Burgundy

Small Pearl Bordered Fritillary

… and a couple more

Small Pearl Bordered Fritillary

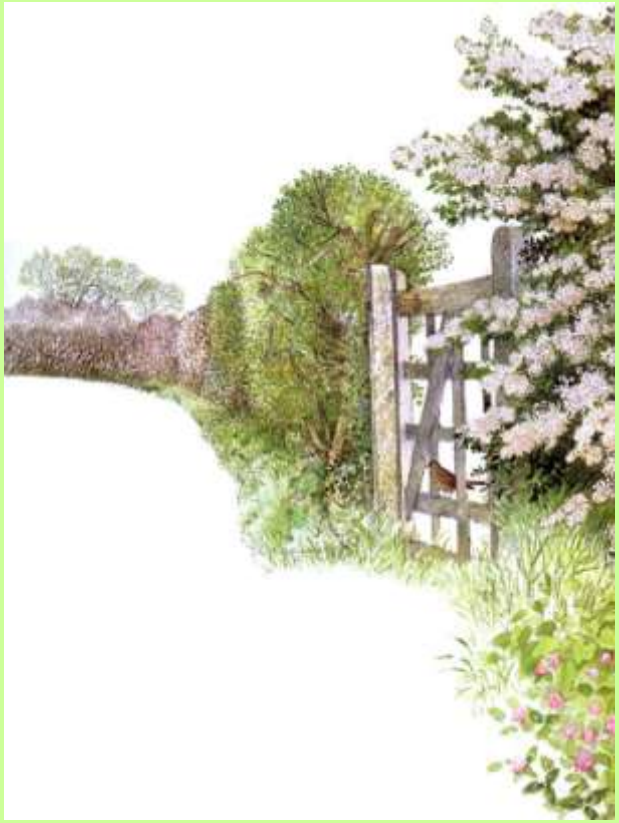
Small Heath

Small Pearl mating pair

The Small Pearl is stable in North Lancashire (Silverdale) and Cumbria

Dingy Skipper

Hedgerows are unique to UK and Ireland



Good hedgerows provide:

Plant succession for animal diversity

Corridors connecting good resources and habitats

Shelter – microhabitats

Warmth

Nectar sources for adults

Vital larval food-plants

Mating locations

Egg laying sites if appropriate plants are present

Safe places to roost

Protection from predators

….and much more

Wonderful oaks but are the hedges suitable for wildlife?

Our dry stone walls are a precious resource.

Hedges can provide sheltered warm spots

…and good places to hibernate?

Mature hedgerow – a favourite location of mine

Butterfly identification

How good are you at the different life stages and their caterpillar food plants?

I find the adult stage relatively easy

….. but the other stages more difficult

egg, caterpillar (larva), chrysalis (pupa), adult (imago)

Orange Tip eggs are easy to find. What's its caterpillar food plant?

Ladies Smock

Orange-tip caterpillars are cannibalistic.

What have they got in common?

Species descriptions: not all Whites eat cabbage?

Gardeners amongst us will know the caterpillar stage of which two of these?

Skippers: more moth-like in appearance at adult stage

White-letter Hairstreak Life-cycle

Its life stages are fascinating to observe.

WHITELETTERH'strFinal2.mp4

Cattle are ideal for grazing – especially Bill Grayson's

We have had
several new arrivals
in our region
in recent years!

New arrivals are always worthy of celebration!

Clockwise:

Comma Speckled Wood
Gatekeeper Ringlet

Small Skipper

A warm welcome to our new arrivals

- expansion of range in a northerly direction
- occurred in a very short period of time
- such expansion would normally take many successive generations of adaptation
- response to climate change?
- climate change has always been with us
- but not at the current rate of global temperature rise
- butterflies are responding and providing clear evidence of the impact of these climate changes.

A Near Extinction in Cumbria

We almost lost
the
Marsh Fritillary.

Saved at the last moment!

Marsh Fritillary Huge Success Story

Now re-introduced to 17+ sites in Cumbria following habitat improvement.

Monitoring butterlies takes you to interesting places

and

can provide surprises too

It’s best to verify our sightings!

Reported to Butterfly Conservation Sightings Page

10 October 2009

Speckled Wood

Lord Street, Southport

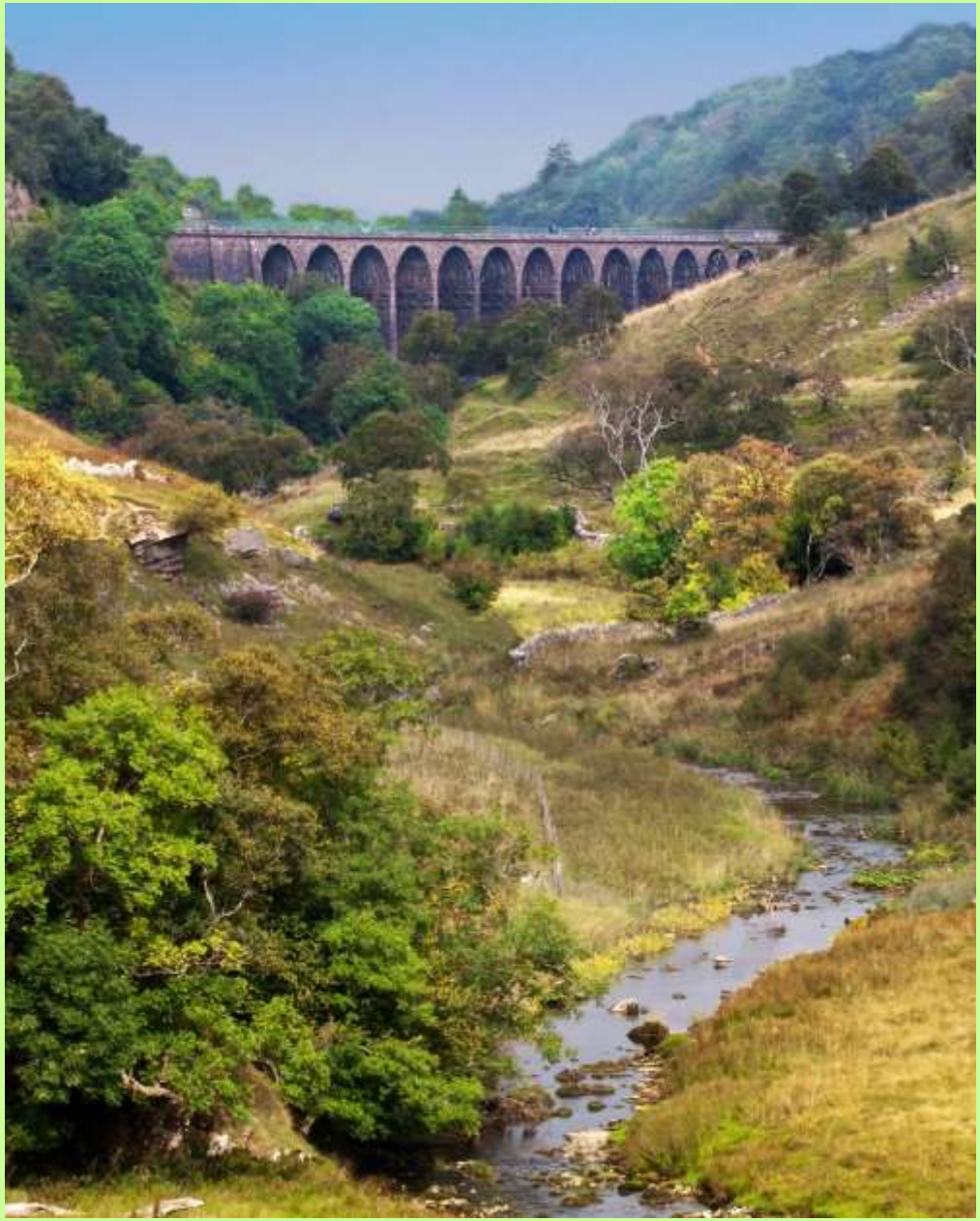
INSIDE Russell & Bromley shoe shop!

My comment: Some lepidopterists obviously need to get out more?

Now that’s a surprise!

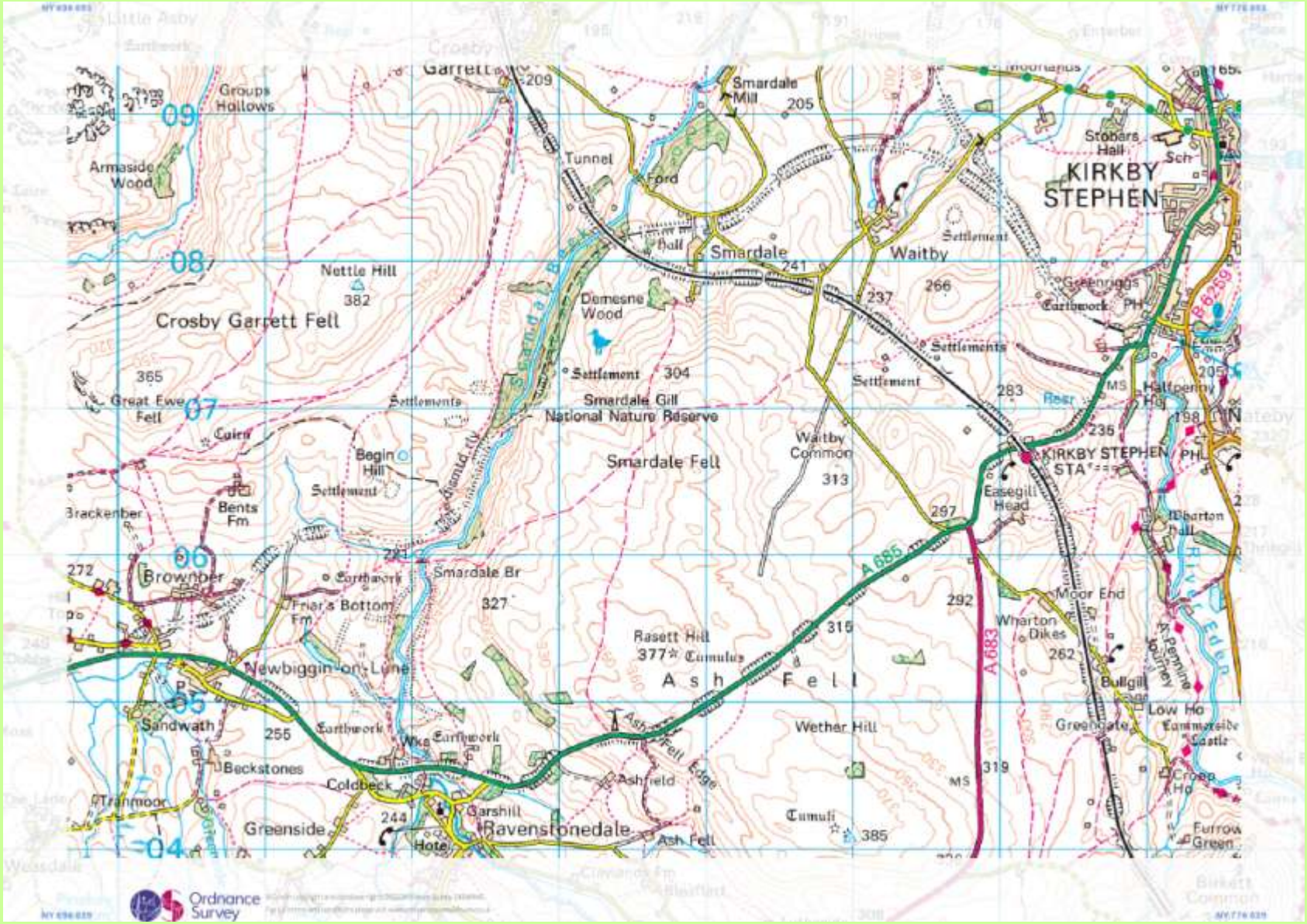

THE NATIONAL TRUST
ARNSIDE KNOTT
Cumbria
Nichols Moss
Nature Reserve
and Site of Special Scientific Interest
Visitors Welcome
Please keep dogs on leads
HEYSHAM NATURE TRAIL
the wildlife TRUST
LANCASHIRE MANCHESTER & MERSEYSIDE
WHITBARROW QUARRY
WHITE SCAR
NO CLIMBING
There is a complete ban on climbing as agreed by The Landowners of Crosthwaite & Lyth. This is a Site of Special Scientific Interest and an important wildlife area, providing sanctuary for rare bird species. Please respect this agreement. Walkers are welcome but should avoid going near the cliff face as it is extremely dangerous.
Marsh Fritillaries
at Finglandrigg Wood
Finglandrigg Wood National Nature Reserve
Sun 8 June 2014, 11am - 2pm
A chance to see Cumbria's rarest butterfly on the wing
EXPLORING ARNSIDE KNOTT
FAUNA NATURE RESERVE
THE NATIONAL TRUST
JACK SCOUT
CUMBRIA WILDLIFE TRUST
Whitbarrow
National Nature Reserve
and Site of Special Scientific Interest
The Hervey Memorial Reserve
Visitors Welcome
Please keep dogs on leads
Cumbria
Wildlife Trust
Whitbarrow
National Nature Reserve
and Site of Special Scientific Interest
Howe Ridding Wood
Visitors Welcome
Please keep dogs on leads
CUMBRIA WILDLIFE TRUST
Latterbarrow
Nature Reserve
Visitors Welcome
Please keep dogs on leads
GAIT BARROWS
NATURAL ENGLAND
NATIONAL NATURE RESERVE
Welcome to
Foulshaw Moss
Nature Reserve
Welcome to Holme Park Quarry
Local Nature Reserve
THE NATIONAL TRUST
EAVES WOOD
Cumbria
Wildlife Trust
Barkbooth Lot
Nature Reserve
WELCOME TO EAVES WOOD
WHITBARROW QUARRY
WHITE SCAR
NO CLIMBING
There is a complete ban on climbing as agreed by The Landowners of Crosthwaite & Lyth. This is a Site of Special Scientific Interest and an important wildlife area, providing sanctuary for rare bird species. Please respect this agreement. Walkers are welcome but should avoid going near the cliff face as it is extremely dangerous.
HOLME PARK
QUARRY
NATURE RESERVE
2001
Butterfly Conservation
Myers Allotment Reserve
Public Footpath
Bell Rake &
Whitbarrow
THE KINDEST CUT
Warton Crag
Local Nature Reserve

Smardale Gill Nature Reserve



Scotch Argus

Smardale Gill Area Map



Scotch Argus 0n A685 Roadside Verge

Urban settings can offer surprises too.

- Late September and October: few nectar sources in the countryside

- Different story in urban areas

- Key plants: flowering ivy, Verbena Bonariensis, secondary-flowering buddleias – brownfield sites best

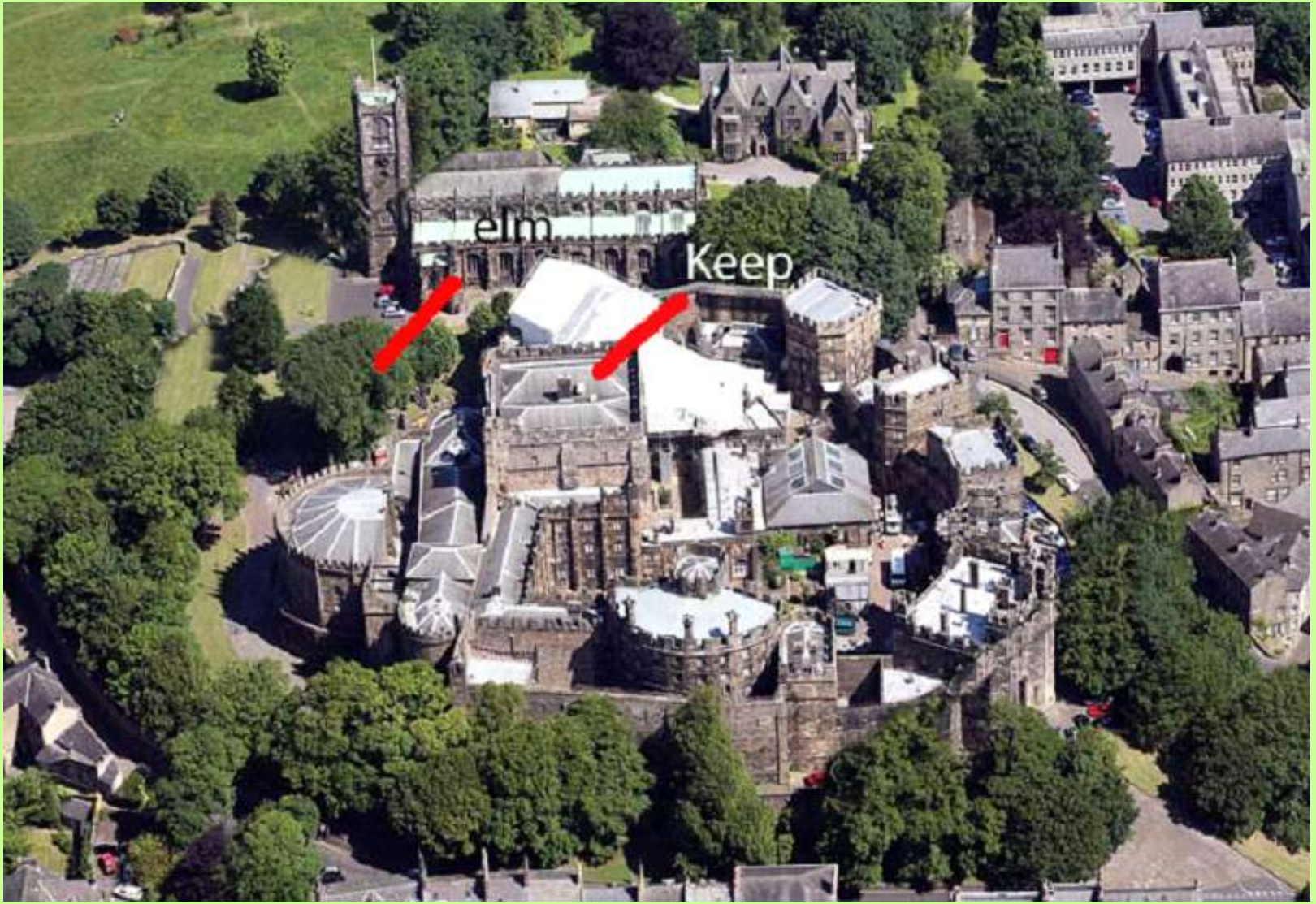
- My results for urban butterfly surveys in late 2015 follow:

Butterflies are nectaring in urban areas in Autumn

		Skerton Lancaster	Kendal	Central Lancaster	Barrow in Furness
	Date	28.09.2015	29.10.2015	01.10.2015	02.10.2015
Species					
Brimstone		0	0	1	0
Small White		3	1	3	0
Large White		1	0	0	0
Painted Lady		5	0	5	2
Peacock		2	1	6	0
Small Tortoiseshell		37	27	92	2
Red Admiral		34	26	95	30
Comma		1	2	2	0
Speckled Wood		14	0	3	1
	Total	95	57	207	35

Send me your results in 2016? – tomdunbar@sky.com

Seeking a White-letter Hairstreak in Lancaster



A magnificent mature Elm is situated between the Priory and the Castle.

Lancaster Castle’s Majesterial Elm

How can you help butterflies and moths?

- Gardening
  - introduce more butterfly-friendly plants
  - record and report what you see in your garden to the BC sightings pages (see links below)

http://www.cumbria-butterflies.org.uk

http://www.lancashire-butterflies.org.uk/

Your help would be appreciated

- Contribute to the work at Fairfield and elsewhere
  - monitor butterflies during visits and report findings
  - Volunteer to take part in work party activities at Fairfield

Take a Great Leap forward and…….

- Join Butterfly Conservation
  - take part in our work parties at a range of nature reserves, tools provided
  - attend our field trips to learn more about butterflies and enjoy the company of other naturalists
  - half price membership offer running right

http://www.cumbria-butterflies.org.uk
http://www.lancashire-butterflies.org.uk

Field Trips

<u>BUTTERFLY CONSERVATION CUMBRIA BRANCH –</u>

High Brown Frit at Eaves Wood

Moths of Humphrey Head
Moths at Cumbria Wildlife Trust's Plumgarths gardens.
Butterflies of Warton Crag
Butterflies of Witherslack Woods and Howe Ridding
Mountain Ringlets at Irton Fell
Annual Open Day and AGM at Hay Bridge Nature Reserve,
Butterflies and Moths of Yewbarrow (Witherslack)
Moths at White Scar Quarry, Whitbarrow
Butterflies of Allithwaite Quarry and Wartbarrow
Butterflies and day-flying moths of Great Asby Scar National Nature Reserve
Mountain Ringlets, Haweswater
Bracken-bashing at Township Plantation
Butterflies of Undermillbeck Common
Butterflies of Brigsteer and Flash Bank Woods,
Butterflies of Halecat Woods and Nursery
Butterflies of Smardale, from 1030 hours
Butterflies of Farrer's Allotment
Early to mid- August – counting Marsh Fritillary webs
Late summer Butterflies of Kendal, from 1000-1300 hours
Butterflies of Gait Barrows, from 1000-1400 hours
Urban butterfly walks, probably in Barrow-in-Furness, Lancaster and Carlisle
Moths at Grubbins Wood, Arnside from 2030 hours till late
White-letter Hairstreak egg hunt, from 1000-1600 hours

Our work-parties help manage key butterfly sites

Come and join us.

Details on the websites:

http://www.cumbria-butterflies.org.uk
http://www.lancashire-butterflies.org.uk

Restoring habitat locally – come join us to save these threatened species.

Finally
Some personal thoughts from Matthew Oates – a well-renowned butterfly enthusiast

Matthew OatesOK.mp4

Warning! - watching this video may be prove infectious for a lifetime

Perhaps Matthew should boycott Geoffrey's millinery supplier?

Here’s hoping you enjoy the
2016 butterfly season

Thank you for coming this evening

Duke of Burgundy

Red Admiral

Orange Tip

The End

Butterfly Habitats

High Brown and Pearl Bordered Fritillary Habitat

Both are specialist species?

Ideal Habitat Condition

Unsuitable Habitat

High Brown and Pearl Bordered Fritillaries

Prior to the seventies these two butterflies were far more widespread in England and Wales. Their most common habitat was mature woodland coppiced in a long rotation.

Most woodland habitats have become unsuitable for these specialist butterflies. Extinctions have been commonplace especially in southern UK.

What are the causes?

See next slides for some possible answers.

Pearl Bordered Sightings 2015 - a species in decline

Species	Site	Quantity	Date	Comment
Pearl-bordered	Whitbarrow Scar	1	15-May-15	
Pearl-bordered	Whitbarrow NNR	2	26-May-15	
Pearl-bordered	Whitbarrow	11	23-May-15	
Pearl-bordered	Farrar's Allotment	1	13-May-15	
Pearl-bordered	Township Allotment edge above Howe Ridding	1	24-May-15	
Pearl-bordered	Warton Crag	1	07-Jun-15	
Pearl-bordered	Warton Crag	10	13-May-15	
Pearl-bordered	Warton Crag	2	12-May-15	
Pearl-bordered	Warton Crag	1	11-May-15	1st Pearl Bd of 2015

Heysham Nature Reserve

Species	Quantity	Date	Recorder	Stage
Large Skipper	2	05-Jul-15	Dunbar T	Adult
Small Skipper*	4	05-Jul-15	Dunbar T	Adult
Common Blue*	5	05-Jul-15	Dunbar T	Adult
Peacock	2	05-Jul-15	Dunbar T	Larval web
Red Admiral	1	05-Jul-15	Dunbar T	Adult
Small White	2	05-Jul-15	Dunbar T	Adult
Speckled Wood	8	05-Jul-15	Dunbar T	Adult
Meadow Brown	10	05-Jul-15	Dunbar T	Adult
Gatekeeper	1	05-Jul-15	Dunbar T	Adult

Nectaring Brimstone

Brimstone egg on Buckthorn

Causes of decline?

Extinction of many colonies since seventies through many possible factors:

- changes in woodland management
- loss of woodland for urban development and farming throughout the 20th century
- cessation of traditional coppicing
- shading of glades and clearings through natural succession
- carbon deposition promoting unsuitable grasses at the expense of finer grasses and violets
- loss of suitable habitat patches
- fragmentation of meta-population habitat structure
- effects of climate change
- other factors often not understood

There have been similar impacts on our non-woodland sites

Contacts

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