Future Health of the Region's Population & its Natural Environment

Biodiversity and human well-being – Food GRP
Food GRP

• Our focus is the ‘food system’

• ‘We believe people deserve to eat regularly, sustainably, fairly and well. They should be served by a food system that can continually meet the challenges we face’

• Currently our themes are:
  • Food Security
  • Healthy Food
  • Food Cultures
Biodiversity and human well-being

Our wellbeing is greatly influenced by our diet and our surroundings and both are ultimately dependent on the natural world and the diversity within it.

In this session we will explore how:

1. The University of Warwick is working with partners and funders to protect the natural environment on our campuses and more widely within the region (Katherine Mayfield)

2. Our research is focusing on biodiversity to produce and cultivate the components of a healthy diet in a sustainable way (Eric Holub)

3. We are using behavioural and social science approaches to encourage people to consume a healthy and sustainable diet and how diets changed during the lockdown (Thijs van Rens)
Biodiversity on our campuses

Katherine Mayfield
Sustainability Champion, University of Warwick
Campus

• Two campuses:
  • Coventry (290 hectares)
  • Wellesbourne (215 hectares)

• Habitats include:
  • Woodlands, mature trees and hedgerows
  • Lakes, ponds and brooks
  • Meadows and wildflower areas
  • Open farmland

Photo credit: Paul Thompson, member of the Grounds Team
Benefits of greenspace Campus

• Multiple benefits of the environment
  • Biodiversity
  • Health and wellbeing
  • Carbon sequestration

• MSc Wellbeing project
  • Developed a methodology to annual assess individual green spaces on campus for their potential to provide wellbeing benefits
  • Bodies of water, diverse vegetation and good amenities have greatest chance of positively influencing wellbeing
  • Opportunities for improvement – provide seating, enhance diversity and offer engagement
Strategy

• Campus Masterplan (2030 and beyond)
  • Delivery will result in *biodiversity being better than before*
  • Landscape and Biodiversity Strategy

• Sustainability Strategy
  • Achieve biodiversity net gain

• Ecology and Biodiversity Plan
  • Framework and methodology for protecting, creating and enhancing habitats and species
  • 10% net gain on all future development projects on campus
Habitat creation and enhancement

- Arable field margins
- Biodiverse planting
- Hedgerow and woodland planting
- Wildflower meadow including some with solar panel arrays
- Ponds
- Fruiting and flowering trees
- Swales and rain gardens
- Living walls
- Green roofs
2030 plan

**KEY**

**EXISTING FEATURES TO PROTECT, MAINTAIN AND MONITOR**
- Broadleaf woodland/trees
- Semi-improved grassland
- Lakes and ponds with existing wildlife value
- Watercourse/stream
- Ponds with Great Crested Newt records
- Existing hedgerow

**ENHANCE BIODIVERSITY VALUE OF EXISTING FEATURES**
- Semi-improved grassland / wildflower meadows
- Natural waterside improvements and management
- Buildings - Retrofit where appropriate, green / blue roofs / green walls / bat & bird boxes
- Enhance amenity grass with native wildflower plug plants and / or spring bulbs
- Manage / diversify grass verges and field margins
- Existing street trees - potential for adding nest boxes
- Existing mature / parkland trees - potential for adding nest boxes

**CREATE ADDITIONAL BIODIVERSITY VALUE**
- Proposed broadleaf woodland plantation
- Buildings - Priority buildings to design in green / blue roofs / green walls / bat & bird boxes
- Proposed wildlife ponds
- Proposed biodiverse swales and raingardens
- Proposed biodiverse / nectar-rich ornamental planting, including native species
- Proposed areas to including bio-diverse edibles ie grow boxes / herb beds / physic gardens
- Proposed native hedgerow
- Proposed parkland trees
- Proposed street trees to strengthen wildlife corridors
- Proposed fruiting / floral trees

**OTHER LANDSCAPE AREAS**
- Arable / Improved grassland
- Improved Grassland / Grass sports pitches
- Artificial / hard sports surface
- Amenity grassland
- PV panels within wildflower meadow
- Future Development Area
Eco Park

• Three zones
  • Ecology
  • Discovery
  • Energy

• Opportunities for study

• Community involvement
  (schools and groups)
Recent biodiversity projects

- Hedge-laying – Cryfield residences
- Coppicing – cricket mound
- Bug hotels – Westwood and Physics
- Swallow boxes – Pavilion
- Reduced mowing – residences
- Fruit trees – Gibbet Hill
- Gabions on lakes
Future biodiversity projects

- Tree planting
- Hedgerow planting
- Wildflower meadows
- Hedgehog houses
Engagement in green space

• Nature walks
• Species surveys
• Hedgehog Friendly Campus
• Events
• Allotment Society
Working with partners (WWT)

• EcoPark

• Wilder Communities project
  • Potential funding for wildflower meadow creation on main and Wellesbourne campus

• Promote opportunities for engagement to staff and students
  • Wilder Future for Warwickshire launch event on campus
  • Local volunteering opportunities
Working with partners (AFWN)

- Network of farmers and landowners (37 farms)
- Share best practice on improving land for wildlife
- Tree sparrow project at Wellesbourne
  - Feed birds
  - Nest boxes
  - Winter seed mix
- Owl nesting boxes
- 360m of hedgerow planted
Healthy Food

Professor Eric Holub, Life Sciences
Professor Thijs van Rens, Economics
Biodiversity & Food

Eric Holub
Biodiversity & Food

Eric Holub
Warwick Crop Centre
Warwick Innovation Campus nr Wellesbourne

1949  Farm and facilities established as the National Vegetable Research Station (NVRS)

1980  UK Vegetable Gene Bank established with donations from an OXFAM special appeal

1990  Horticulture Research International (HRI) merger of AFRC & ADAS horticulture R&D sites

2004  Warwick-HRI (HRI joined the university)

2010  School of Life Sciences - merger of Warwick HRI and Dept of Biology
Biodiversity within species
(using genetic diversity)

• UK Vegetable Genebank
  (brassicas, lettuce, carrot, onion)

• Vegetable Genetic Improvement Network
  (VeGIN)

• Other research material
  (e.g., common bean heirloom collection)
Natural Light Growing Centre

- RIPE Ltd
- CHAP Agri-Tech Centre
- University of Warwick

RIPEHouse (Defra- FIP project)
Biodiversity & Food
Biodiversity & Food Culture
Consumer demand for healthy sustainable diets

Thijs van Rens

Food GRP – Healthy Food theme: Warwick Obesity Network

- Past: Who we are (What we did in the past)
- Present: What we have done as a network
- Future: What we are trying to achieve
Warwick Obesity Network – Who we are

**Social sciences:**
- Economics
- Behavioural science
- Psychology

**Life sciences:**
- Public health
- Nutrition
- Clinical medicine
- Crop science
Warwick Obesity Network – Who we are

How important are food prices as determinants of a healthy diet?  Ethnicity-specific BMI cutoffs
How (un)healthy are diets in sub-Saharan Africa?  Did Healthy Start vouchers increase F&V intakes?
Does fruit and vegetable consumption affect mental health?
Do workplace interventions promote health and wellbeing?
Can we nudge people into more physical activity with an app?
Should fruits and vegetables be subsidised?
Do choice architecture interventions improve diets?
The weight loss potential of oral antidiabetic drugs
Early predictors of diabetes in IVF pregnancies

How can we promote consumer demand for diets that are good for health and environment?
Warwick Obesity Network – What we did

• Documented changes in F&V consumption and health during lockdown in the West Midlands (submitted to BMJ Nutrition, Prevention and Health)

• Generated impact of our research on national and local policy makers, and the general public.
  • Evidence reviews, policy briefs, newspaper articles, podcasts, written evidence submission
  • Topics: junk food advertising, Christiano Ronaldo, microbiome and fibre, mindful eating, intermittent fasting, ethnic differences in Covid outcomes and obesity, ...

• Built strong partnerships with local governments and NGOs around improving access to affordable healthy food.
Fruit and vegetable consumption (portions/day), during-after, N=494
Vegetable consumption (portions/day), during-after, N=494
Fruit consumption (portions/day), during-after, N=494
F&V consumption (self-reported change), during-after, N=497
F&V consumption (self reported change), before-during, N=497
Wellbeing (satisfied with life), during-after, N=494
Wellbeing (satisfied, self-reported change), during-after, N=497
Wellbeing (satisfied, self reported change), before-during, N=497
Mental wellbeing (SWEMWBS), during-after, N=494
Health, self reported 1-5, during-after, N=494
Weight change (kg), during-after, N=424
Weight (self reported change), during-after, N=497
Weight (self reported change), before-during, N=497
Exercise (times/week), during-after, N=494
Warwick Obesity Network – Partners

- Coventry City Council
- Feeding Coventry
- UK Food Systems
- Mandala consortium (Birmingham + Food Foundation + Cambridge + Warwick + ...)
- Warwickshire Food Forum
- LEAP (Livestock, Environment and People)
Future: Promoting demand for healthy diets

• Continue our impact activities
• Research online shopping behaviour
• Support an online healthy food market in Coventry (and the first social supermarket in the Warwickshire)
• Research using “field experiments”
• Funding requirements:
  • Develop browser plug in
  • Renovate mobile healthy food market
  • Operating costs MHFM
  • Research grant
Thank you for your attention

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