RBST

Rare Breeds Survival Trust

Sustaining the UK’s native and rare breeds

A huge range of native livestock breeds across the UK

- 115 + sheep, goat,cattle,pig & equine native breeds
- 75 + chicken,turkey, duck and geese breeds

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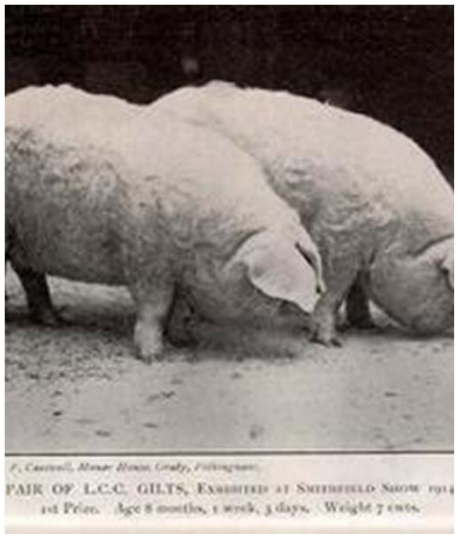
UK Native Breed extinction

- Between 1900 and 1973, the United Kingdom lost 26 of its native breeds including:
  - Cattle: Alderney, Suffolk Dun, Sheeted Somerset, Castlemartin, Caithness, Irish Dun
  - Sheep: Limestone, St Rona's Hill, Roscommon, Rhiw
  - Pigs: Ulster White, Small White, Yorkshire Blue & White, Dorset Gold Tip, Lincolnshire Curly Coat, Cumberland.
  - Horses: Manx, Cushendale, Tiree, Long Mynd, Galloway, Goonyhill
  - Chickens: Lincolnshire Buff
- Since the formation of the Rare Breeds Survival Trust in 1973 no other native livestock breed has become extinct in the UK
- **But….**



PAIR OF L.C.C. GILTS, EXHIBITED AT SMITHFIELD SHOW
1st Prize. Age 8 months, 1 week, 3 days. Weight 7 cwts.

B. LIMESTONE RAMS AT A YEAR OLD.
All bred by T. A. Coulthwaite, Crawthorpe Hall, Burton, Westmorland.

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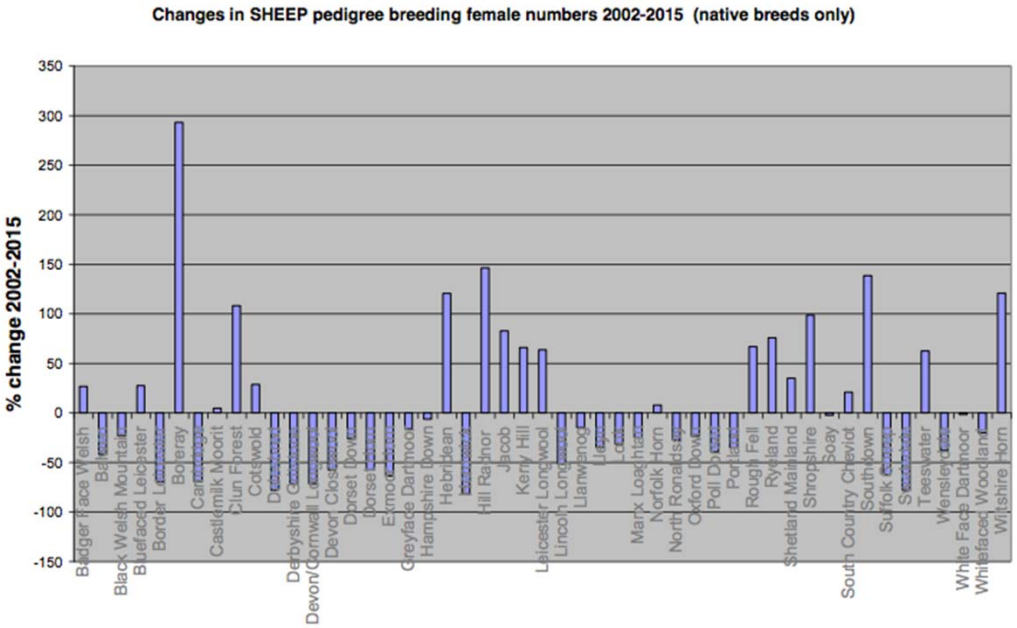
Numbers and genetic diversity in many breeds are falling

- In 2013 RBST classified 57 breeds as rare - by 2015, that number had grown to 62.
- Defra's most recent inventory emphasised this trend
- Pig and equine native breed pedigree registrations have halved since they reached their peak a few years ago.
- Numbers of utility native breeds of poultry are critically low
- Registered numbers of native cattle are stable, but it is critically important that genetic diversity is maintained.
- Populations of native sheep are stable but the number of breeds categorised as rare is growing
- Numbers of our only two native breeds of goat remain critically low
- Genetic diversity within all our breeds is in decline



UK Farm Animal Genetic Resources (FAnGR) Breed Inventory
Changes in numbers of pedigree farm animals 2002- 2015

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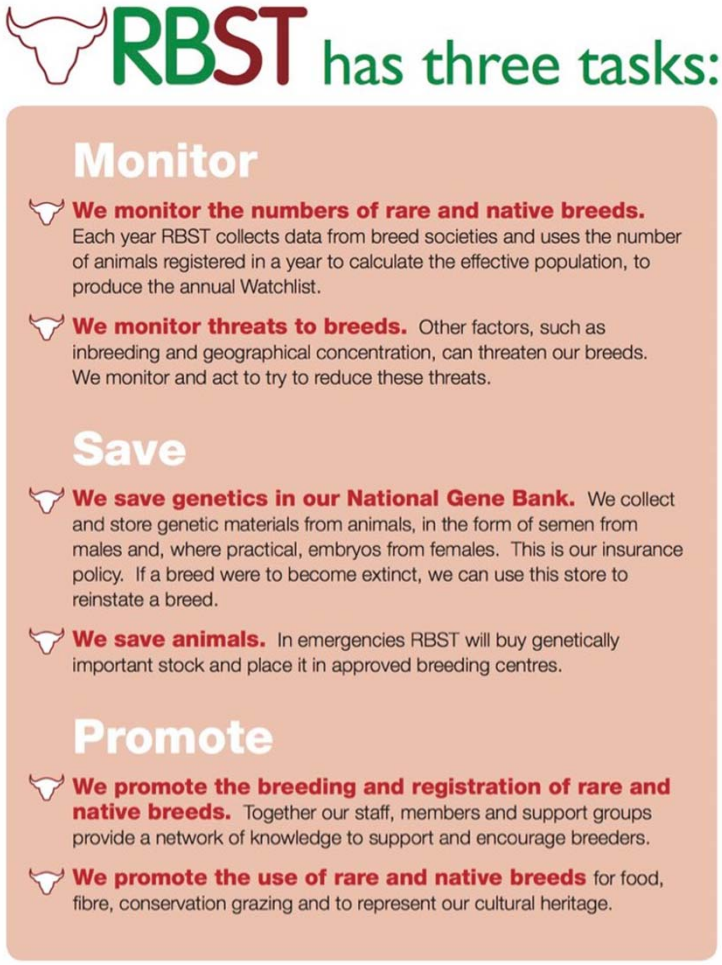
RBST Strategy

- A huge inventory
- Global and national pressures
- Finite and small resources
- Focus is needed



Responding to challenges

- Developing the organisation
- Increasing outreach
- Using the science

We've set ourselves goals in three areas:

1. **Financial Security**
2. **Monitoring and Saving Rare and Native Breeds**
3. **Promoting Rare and Native Breeds**

	2016-2020 Targets	2020-2050 Direction
1. Financial Security: Balancing the Books		
£: Operational (core) funding	Take RBST's core business to a positive cash position by the end of 2017	From then on deliver an ongoing cash positive operation
£: Fund Reserves	Maintain and grow our £2m emergency endowment fund as an insurance against an unforeseen disaster involving our farm livestock biodiversity	Grow this fund in line with inflation
£: Project funding	Secure sufficient project funding to enable us to complete the building of our national farm livestock Gene Bank and for all other projects monitoring, saving and promoting rare and native breeds	
2. Livestock Genetics: monitoring and saving		
Breeds classed as rare **In-Situ**	Today 62 of the 115 of the UK native livestock breeds are classified as rare and the trend is upward. In the short to medium term continue to highlight trends & issues	In the medium to long term: reverse this trend by increasing the demand for native breeds to ensure genetic diversity maintained
National Gene Bank **Ex-Situ**	Short term: evaluate the completeness of our existing National Gene Bank	Short to medium term: build partnerships across the sector in order to deliver a completed National Gene Bank over the long term
3. Valuing Native Breeds: promoting		
Use them or lose them! Education Food Fibre Conservation grazing Cultural heritage	Demonstrate ongoing progress year on year, not least: • Media cover • Public engagement at events • Improved results at RBST shows and sales • Caterers and retailers selling rare and native breeds • Stakeholder engagement: Government, Society and Industry • Increased membership • Well managed Support Group network to cover all parts of the UK	

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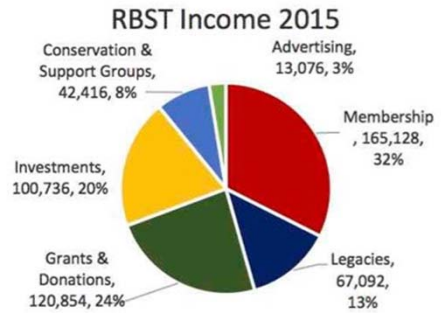
Developing the organisation

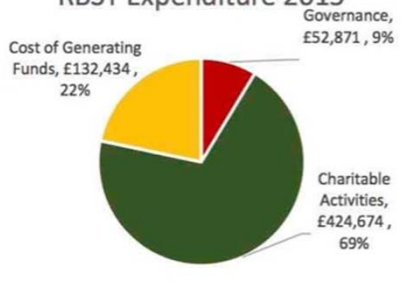
- Long term financial stability
- Developing staff and trustee expertise
- Wider engagements with breed societies and Government

Resulting in an operating loss of £105,100, included:

- £4,423 exceptional Gift Aid interest repayment
- £7,430 on cattle semen splitting and North Ronaldsay sheep projects
- £12,586 planned Gene Bank project spend down from restricted funds.

The underlying trading loss was £80,661 compared to £158,434 in 2014.





Income	2015	2014
Membership	165,128	148,332
Legacies	67,092	19,870
Grants & Donations	120,854	114,763
Investments	100,736	107,178

Expenditure	2015	2016
Charitable Activities	132,434	150,859
Cost of Generating Funds	424,674	412,142
Governance	52,871	45,633
Exceptional Item (Gift Aid)	4,423	57,295

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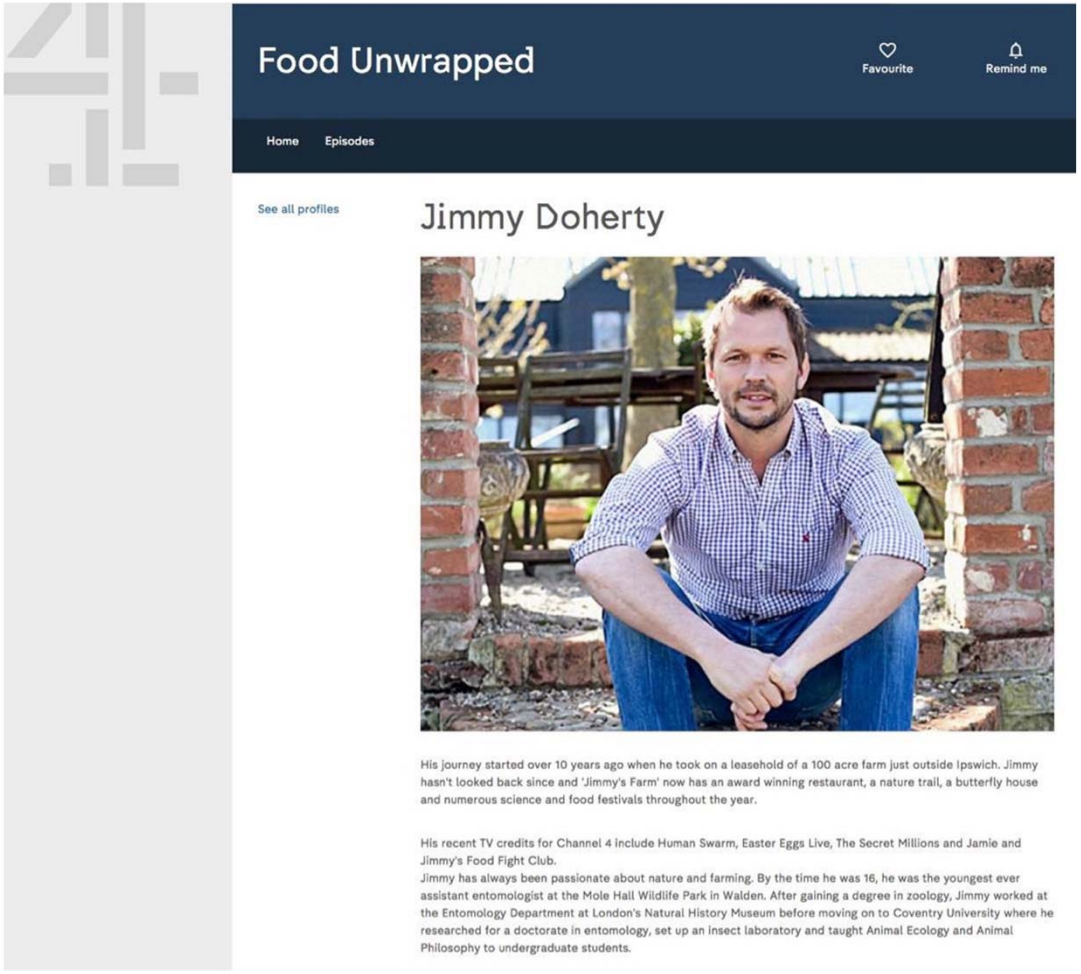
Developing the organisation

- Trustee experience
- Patron
- President
- Vice Presidents



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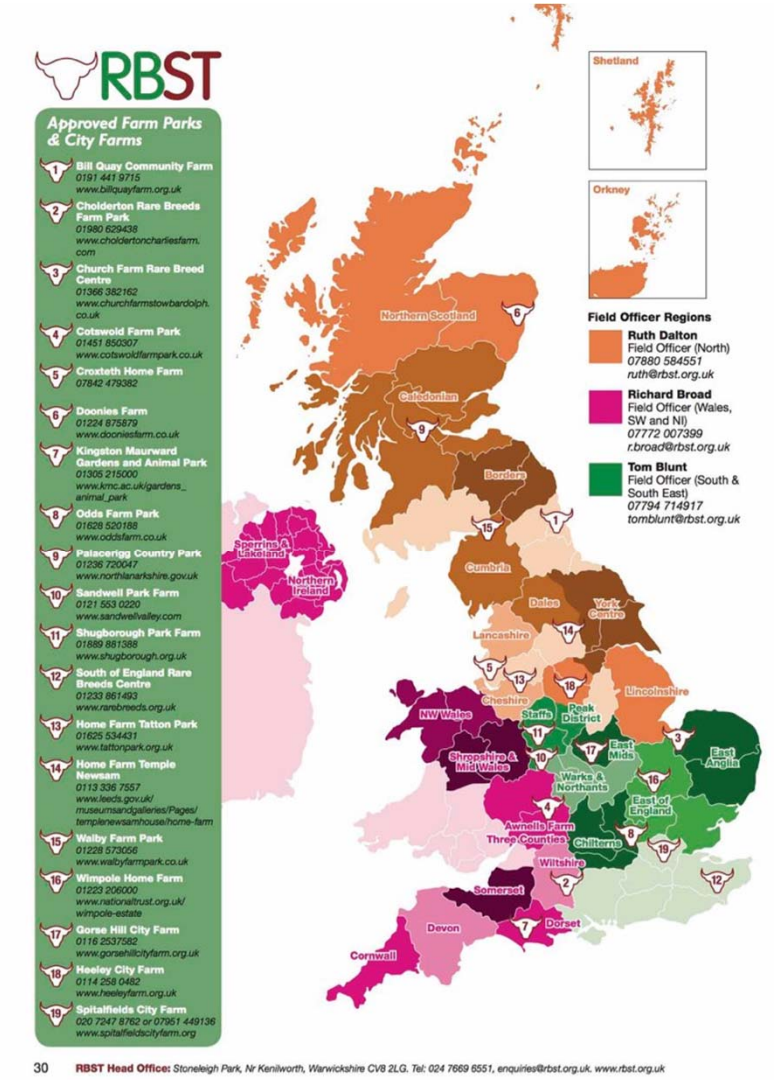
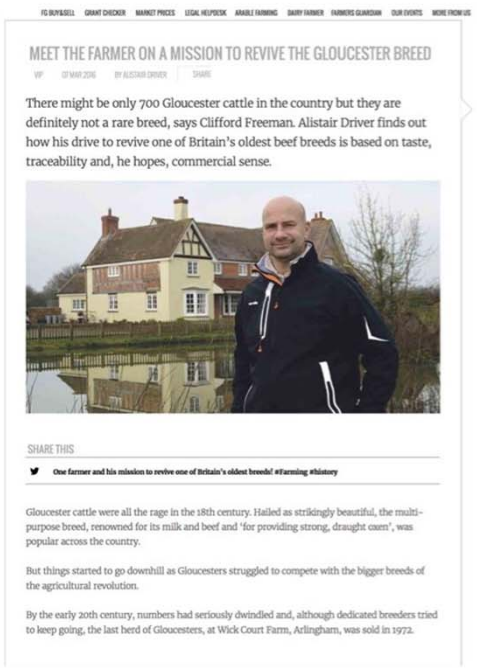
Increasing outreach

- 5000+ members
- 3 Field Officers
- 27 local support groups
- Attendance at shows and events
- Supporting key breeding initiatives
- 4 issues of the Ark magazine a year



Increasing outreach

- Moving from a core base of Rare Breed enthusiasts
- Engaging with a wider group of supporters
- Using print, broadcast and social media
- Messages including use, conservation, landscape, heritage, economics, biodiversity
- Parliamentary and Government support



MEET THE FARMER ON A MISSION TO REVIVE THE GLOUCESTER BREED

There might be only 700 Gloucester cattle in the country but they are definitely not a rare breed, says Clifford Freeman. Alistair Driver finds out how his drive to revive one of Britain's oldest beef breeds is based on taste, traceability and, he hopes, commercial sense.

SHARE THIS

One farmer and his mission to revive one of Britain's oldest breeds! #Farming #history

Gloucester cattle were all the rage in the 18th century. Hailed as strikingly beautiful, the multi-purpose breed, renowned for its milk and beef and 'for providing strong, draught oxen', was popular across the country.

But things started to go downhill as Gloucesters struggled to compete with the bigger breeds of the agricultural revolution.

By the early 20th century, numbers had seriously dwindled and, although dedicated breeders tried to keep going, the last herd of Gloucesters, at Wick Court Farm, Arlingham, was sold in 1972.

Smallholder Special

The best in breed?

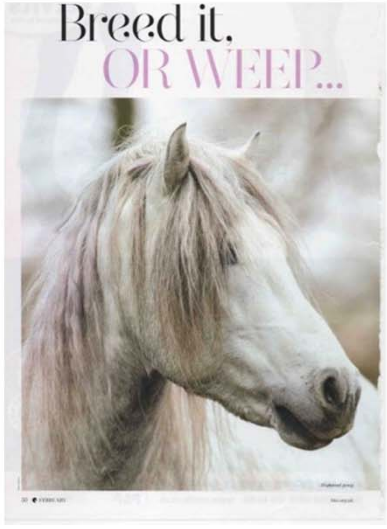
What are the best breeds for life on a smallholding?

Guy Whitmore finds out

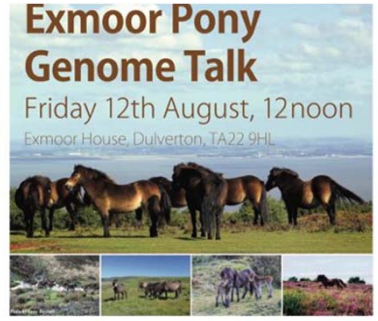
SHEEP

YOUR VIEW

Smallholder Special 3



Breed it, OR WEEP...



Exmoor Pony Genome Talk

Friday 12th August, 12noon

Exmoor House, Dulverton, TA22 9HL

Speaker: Dr Sarah Blott, University of Nottingham, School of Veterinary Medicine and Science.

Title: How genetic science can help conserve and sustain the Exmoor Pony.

Summary: This talk, by one of the country's leading experts, will give an introduction to DNA, genes and genomics, then describe a project which is being developed to fully characterise the genetic profile of Exmoor's iconic native ponies.

Tea and coffee will be provided.

Booking is essential - please contact Ellie Woodcock on ewoodcock@exmoor-nationalpark.gov.uk or 01398 322231 to book a place.

Hosted by: Exmoor National Park in partnership with: The Rare Breeds Survival Trust, Exmoor Pony Society, Exmoor Moorland Pony Breeders Group

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Using the science

- Semen collection 1940's technology
- Collect ova, embryos, genetic materials
- Continual addition and removal needed
- Link to information resources
- Use in context of breed conservation and improvement

RBST

Livestock Genetics: monitoring and saving in the Gene Bank and in the field

We'll engage across all stakeholders: Industry, Government and Civic Society
Securing the future of our rare and native breeds of farm livestock.

Our policy for saving native breed livestock genetics, breed by breed!

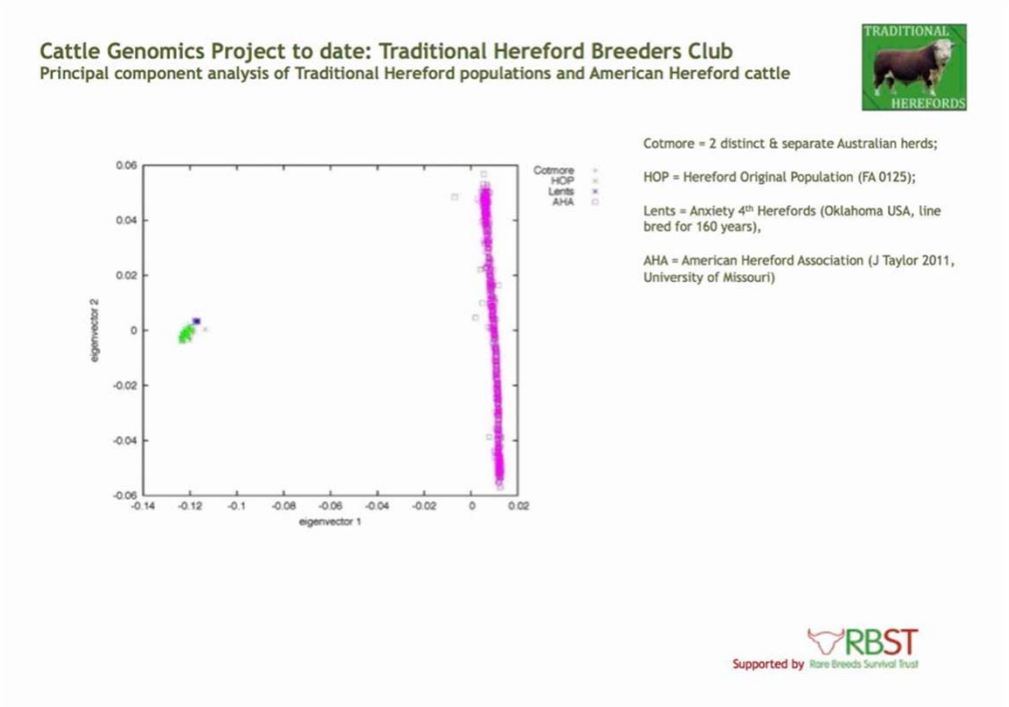
Gene Bank**	25 unrelated 'animals'*		DNA	In the field
	Semen	Embryos		
Cattle	1 animal = 90 doses	1 animal = 8 embryos	Review what and when we should collect more Priority ovaries, easiest hair/blood?	Breeding Programmes ongoing
Sheep & Goats	1 animal = 55 doses	1 animal = 8 embryos		
Equine	1 animal = 100 doses	Twemlows Stud & Liverpool University 2-10 years until freezing practical (single embryo per collection)		+AI +IVF: under review +Cloning: under review
Pigs	1 animal = 50 doses	Is any work being undertaken in this area?		
Poultry	Cryogenic storage and collection options under review			In-situ under discussion Review registered flocks & individual unique ID

* Ideal ratio of semen:embryos under review. Suggested embryos >30% of cattle Gene Bank and > 20% of sheep and goat Gene Bank.

** National Gene Bank policy will be regularly reviewed in line with present knowledge and best practice.

Using the science

- Genomic technologies catching up with genomic science
- The sub £750/€1000 (whole) genome
- We can now use genotype as much as phenotype
- Raises questions and challenges



Three Challenges: In-situ conservation

- Genetic diversity versus numbers of animals
- Ensuring fit for purpose
- Accommodating breed improvement
- Wider criteria for inventories
- Using genomics as well as phenotype
- Rare <> Native
- Poultry identification and recording
- Economic sustainability
  - Meat
  - Fibre
  - Pasture and land management
  - Tourism

Dairy Shorthorn (Original Population)

Characteristics

are long lived, fertile and maternal. Cows
roduce calves at up to 14-17 years old.
are docile and easy to manage.

ory

e Shorthorn breed of cattle evolved in the
e 18th Century, from Teeswater and
rham cattle found originally in the North
st of England.

1822 the first Herd Book containing 710 bulls and 850 cows was published, and Coates's Her
ok became the first pedigree herd book for cattle in the world.

er the formation of the Shorthorn Society of Great Britain and Ireland, in 1874, they have pub
ates's Herd Book ever since.

e breed was used in the early part of the 20th Century, primarily as a dual purpose breed.

ring this time all bulls used were licensed by MAFF and in 1937/38 the Dairy Shorthorn bulls
enced numbered 23,730 against a total of 12,917 bulls of all other cattle breeds

ecialisation for beef or milk led to the Beef Shorthorn having their own section of the herd bo
1958.

scheme to introduce outside breeds was introduced in 1970 within the Dairy Shorthorn. It is t
imals without any of this cross breeding which are seen as the Original Population by the RB

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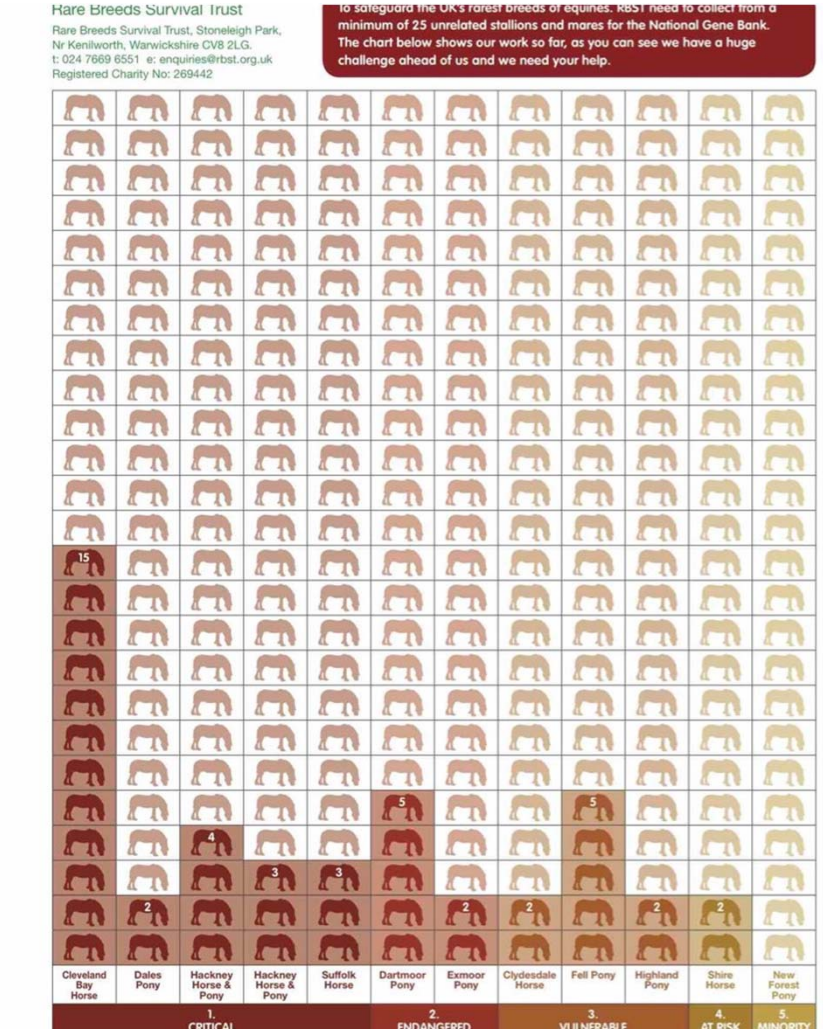
Three Challenges
Ex-situ conservation

- Filling a huge gap
  - 115 sheep, goat,cattle,pig and equine native breeds
  - 75 chicken,turkey, duck and geese breeds
- £millions needed
- New genetic sample types
- From 1940’s to 2050 storage technogies
- On farm collection to reduce costs
- Poultry collections
- Linking genetic resources to users with pedigree and performance data



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Three Challenges
Evolving perspectives

- Impact of genomics
  - What is a breed?
  - Upgrading
  - Remote populations
  - Disease resistance
  - Gene editing
- Partnership working
  - FAnGR committee
  - AHBD
  - Breed Societies
  - Chefs
  - SlowFood
  - Plantlife
  - Crop Trust
  - Internationally,
    - EU, USA Canada, Australia
- Widening support
  - A new UK farming policy
  - Thousands of Rare Breed keepers
  - Millions of Native Breed supporters

Sustaining the UK’s native and rare breeds