Natural Selection

All SISIS machines are designed, patented and manufactured in Great Britain.

12 Month Warranty, Choice of Finance Arrangements, National Spares and Service Network.

Serving Groundsmen and Greenkeepers for 60 years

sisis sports ground maintenance machinery
Be ahead of the rest with MAXWELL HART and save £££s on your 1993 maintenance budget. For further details simply return this card.

Name: ..................................................
Club: ..................................................
Club Address: .......................................
Post Code: ................................. Tel. No.: ..........................
Signature: ............................................

Gl. 10.92
Maxwell Hart
612 Reading Road
Winnersh
WOKINGHAM
Berkshire
RG11 1BR
ALL THE DETAILS YOU NEED
Our FREE READER REPLY SERVICE keeps YOU in the picture

Use the post-paid Reader Reply Card facing Page 58 for further information on the products and services advertised in this issue. Just state the company's Ad Ref number and leave it to us.

ADVERTISERS' INDEX
a quick reference guide

<table>
<thead>
<tr>
<th>Ad Ref</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acbon North East Ltd</td>
<td>386</td>
</tr>
<tr>
<td>AF Trenchers</td>
<td>203</td>
</tr>
<tr>
<td>Allen Power</td>
<td>126</td>
</tr>
<tr>
<td>AlAREST Mowers</td>
<td>55</td>
</tr>
<tr>
<td>Allerton &amp; Ellis</td>
<td>7</td>
</tr>
<tr>
<td>Barrowbridge</td>
<td>172</td>
</tr>
<tr>
<td>Dixon &amp; Holliday</td>
<td>214</td>
</tr>
<tr>
<td>Eric Hunter</td>
<td>4</td>
</tr>
<tr>
<td>E&amp;S Sportsgrounds</td>
<td>248</td>
</tr>
<tr>
<td>Ford</td>
<td>160</td>
</tr>
<tr>
<td>Greenbase</td>
<td>384</td>
</tr>
<tr>
<td>Greensward Engineering</td>
<td>312</td>
</tr>
<tr>
<td>Hardi</td>
<td>25</td>
</tr>
<tr>
<td>Hayward Beaver</td>
<td>90</td>
</tr>
<tr>
<td>Iseki</td>
<td>5</td>
</tr>
<tr>
<td>Kubota</td>
<td>86</td>
</tr>
<tr>
<td>Lease Management Services</td>
<td>371</td>
</tr>
<tr>
<td>Lely</td>
<td>45</td>
</tr>
<tr>
<td>MJ Abbott</td>
<td>296</td>
</tr>
<tr>
<td>M&amp;T Contracts</td>
<td>22</td>
</tr>
<tr>
<td>Modus</td>
<td>254</td>
</tr>
<tr>
<td>Nettion</td>
<td>373</td>
</tr>
<tr>
<td>Patterson</td>
<td>55</td>
</tr>
<tr>
<td>Pro-Tree Products</td>
<td>37</td>
</tr>
<tr>
<td>Ransomes</td>
<td>358</td>
</tr>
<tr>
<td>Rhône Poulsen</td>
<td>59</td>
</tr>
<tr>
<td>Rigby Taylor</td>
<td>127</td>
</tr>
<tr>
<td>Rishboro Turf</td>
<td>29</td>
</tr>
<tr>
<td>Rollan</td>
<td>34</td>
</tr>
<tr>
<td>Rufford</td>
<td>30</td>
</tr>
<tr>
<td>Shelley Signs</td>
<td>364</td>
</tr>
<tr>
<td>SISIS</td>
<td>176</td>
</tr>
<tr>
<td>Supplies Ltd</td>
<td>17</td>
</tr>
<tr>
<td>Swimming Pools</td>
<td>17</td>
</tr>
<tr>
<td>Watermark</td>
<td>32</td>
</tr>
<tr>
<td>College</td>
<td>26</td>
</tr>
<tr>
<td>Recruitment</td>
<td>45</td>
</tr>
<tr>
<td>Buyers Guide</td>
<td>51</td>
</tr>
<tr>
<td>Classifieds</td>
<td>54</td>
</tr>
</tbody>
</table>

How to achieve mean greens

The perfect finish can be yours - we look at the latest grass cutting equipment, which uses latest thinking and innovative techniques to create an ultimate playing surface. Pages 27-33

Greengreens students face tough test

The line-up of candidates nominated for the Toro/PGA European Tour Student Greengreen of the Year award. Pages 19-21

The Iseki Championss' final of finals

Sectional, regional and now national... David White reports from the exciting climax of the Iseki Championships... Pages 22, 24, 24

Building a new links course

Bernard Findlay concludes his insight into the construction process behind Portstewart's new links. Pages 15-17

Drainage decisions: now is the time to act

What to look for when planning improvements. Pages 38, 44, 46

DEPARTMENTS

Faces and places

Greencapers' Library

Around the Green

COVER PICTURE:

Jim Byrne, overall winner in another exciting Iseki Championship. Details and pictures, inside.

Greenkeeper Education and Development Fund

Launched by Viscount Whitelaw at BTME 1992, the Fund provides the key to the future for greenkeeper, golf club and game. Individuals and companies can join the Golden Key Circle and Silver Key Circle. For details, contact BIGGA on 03473 581.

GOLDEN KEY CIRCLE COMPANY MEMBERS:

Greenkeeper Advertorial & Exhibition & Seminar Programme 1995

BTME Gold Key Circle Company Membership Pack includes America's most significant Indoor Event. Contact Debbie Savage on 03473 561 for a BTME 1993 Information Pack and find out how your company can take part.
At Kubota, we don't just cut. We collect. And we deliver!

No more heavy bags to carry and empty manually. These specially designed large capacity collectors allow the discharge of grass to be carried out direct from the operator seat.

The 420 litre capacity GCD420 is designed specifically for the G series. And the 700 litre GCD 700 is ideal for the big capacity B2150/HST.

The latter will not just deliver. Its telescopic design means that you can empty the cuttings into a truck or trailer at any height from 0.76 of a metre up to 1.9 metres.

Both, of course, feature the Kubomatic alarm system to let the operator know when the collector is full.

If you want to know more about the specially designed Kubota collection and delivery service, just complete and post the coupon. The postman will deliver the facts.

Flexible. Budgetable. Available. All new Kubota machines are available through Kubota Flexiplan, which offers low cost rentals from two to five years and which can include comprehensive maintenance plans, breakdown cover and replacement machines.

KUBOTA (UK) LIMITED
DORMER ROAD, THAME
OXFORDSHIRE OX9 3UN
Tel: 084421-4500 Fax: 084421-6685
Telex: 837551
Who and what are moving on and moving in, in the greenkeeping industry

- Ransomes has announced a key appointment within its sales and marketing department. Christopher McGowan will join the company as divisional sales and marketing director this month. McGowan joins Ransomes from Benford Ltd (BMC Group plc), where he has been the sales and marketing director for three years.

- Kubota (UK) Ltd, engines has appointed Glasgow based Duncan Rogers (Engineering) Ltd - DRE Ltd - as its new engine dealer for Central Scotland and Northern England. Diesel engine specialists for 17 years, DRE Ltd will service Central Scotland from their Glasgow depot. The company will be responsible for the sales, service and parts support for Kubota's extensive range of diesel and petrol engines - power output from 3hp - 100hp. In addition, Kubota has appointed Sutton based SES Engine Services Ltd as a replacement engine dealer for the South Eastern region, covering Kent, Sussex and Surrey.

- De Vere Hotels, owners of The Belfry, have invested £500,000 in remodelling the world-famous Brabazon Course, venue for next year's premier golf event, the Johnnie Walker Ryder Cup.

- The development improves spectator viewing and will offer the players a fresh challenge as 10 of the course's holes have also been transformed by the introduction of new tee positions or remodelled fairway and green bunkering.

- Dave Thomas, one of the course's original designers and the man responsible for the alterations, said: 'It is very exciting when you can go back and do some of the things you would have liked to have done originally and I think the results of the latest work are absolutely marvellous.'

- Greenkeeper International joins with the many friends of Bill McIntyre in wishing him a healthy and happy retirement after 41 years of service at Whitefield GC.

- West Country Groundcare of Axbridge have appointed Steve Sheppard to set up their new workshops at Backwell, near Bristol. Steve has spent 21 years as service manager with Garden and Lawn Equipment of Bristol and has specialised in Toro and Wheelhorse equipment.

- Course Care, the leisure division of Highspeed, have appointed David Smith as their new agent for East Cornwall, Devon and Somerset. David will provide advice on the maintenance of turf machinery. Course Care provide a range of consumables which include high quality lubricants and greases, hydraulic oils and wetting agents; as well as a diesel fuel treatment to prevent black smoke from exhausts and to protect equipment whilst not in use. Free phone: 0800 590069.

- Having started their partnership in July, McMillan-Shiels have succeeded in bringing their first course to the point of opening. The Wildwood in Surrey has 13 holes ready for play ahead of schedule and the remaining holes will be open in spring 1993. Jack McMillan and George Shiels have overseen the construction and growing-in and will continue to monitor its maintenance in the years ahead.

- A second major project at Leek Wootton for the Golf Development Trust, a 45 hole complex, is almost complete and is scheduled to open in 1993, developed under their watchful eye. Dave Thomas, one of the course's original designers, said: 'It is very exciting when you can go back and do some of the things you would have liked to have done originally and I think the results of the latest work are absolutely marvellous.'

- Jon Allbutt has indicated that plans are afoot for the staging of a refresher course - to be held in Surrey - aimed specifically at head greenkeepers, secretaries and green chairmen. The course will cover PA1 and PA2 training and testing for spraying. Interested parties should call Jon on 0959 575575 for details.

- The recent highly successful GA European Open, staged at a gorgeously prepared Sunningdale, was overshadowed by sadness following the accidental death of Zarka Smith in a mysterious motorcycling tragedy, no other vehicle being involved.

- Ransomes has announced a key appointment within its sales and marketing department. Christopher McGowan will join the company as divisional sales and marketing director this month. McGowan joins Ransomes from Benford Ltd (BMC Group plc), where he has been the sales and marketing director for three years.

- Kubota (UK) Ltd, engines has appointed Glasgow based Duncan Rogers (Engineering) Ltd - DRE Ltd - as its new engine dealer for Central Scotland and Northern England. Diesel engine specialists for 17 years, DRE Ltd will service Central Scotland from their Glasgow depot. The company will be responsible for the sales, service and parts support for Kubota's extensive range of diesel and petrol engines - power output from 3hp - 100hp. In addition, Kubota has appointed Sutton based SES Engine Services Ltd as a replacement engine dealer for the South Eastern region, covering Kent, Sussex and Surrey.
Carnoustie’s favourite green tractor.

At Carnoustie they’ve chosen the blues for the greens: Ford compact tractors. A compliment from one famous name to another.

Ford compact tractor performance is helping to maintain a 300 year golfing tradition, providing groundcare over Carnoustie’s 54 holes (including the internationally renowned Championship Course, host to the 1992 Amateur Championship).

Ford New Holland cover the ground with five Series 20 models ranging from 16.7 to 41.3 DIN hp. Each with quiet, fuel-efficient engines, class-leading hydraulic capacity, and the ability to take a wide variety of implements. All models have 4-wheel drive as standard.

Clever ergonomic design makes them easy to operate. Whilst the deluxe cab option*, amongst the best on any compact, guarantees operator comfort whatever the weather.

And you’ve got the extra security of Ford New Holland parts and service back-up: protecting your investment for years to come.

Ford Series 20 compacts. Tractors that’ll suit you to a tee. For full details and the name of your nearest dealer, write to: Ford New Holland Ltd, PO Box 193, Sudbury, Suffolk CO10 6GZ.

*Standard on model 2120. Available at extra cost on models 1720 & 1920 only.
The new STRI publication, *The Care of the Golf Course*, is a compilation of many of the articles written by members of the STRI advisory staff, the vast majority published over the last five years in bulletins and leaflets issued by the Institute.

Thus it must be understood that there is nothing entirely new within its pages, though as a source of reference it will certainly find new and appreciative readers, including college students, those of mature understanding and those seeking to grasp the intricacies of greenkeeping.

In truth, the need for such a book is well overdue, for it contains all that the student, greenkeeper or green chairman will need to ensure that practical husbandry is conducted according to accepted and proven practice, leaving nothing to chance.

To quote from the introduction, "Much has appeared in print, but scattered through various books, greenkeeping magazines, scientific journals and conference proceedings. The greenkeeper or chairman of green seeing a comprehensive source of background information on golf course management has therefore so far been deprived of an obvious single publication. This present volume seeks to correct that deficiency and provide a ready reference which can hopefully be relied upon to provide answers to the innumerable questions which arise during the day to day care of the golf course.

"The above should not be taken as implying that no useful book on modern greenkeeping currently exists. A number of invaluable works have indeed been published and to give a comprehensive picture of available literature, an extensive bibliography has been included at the end of the present volume. As an outstanding work on the subject, one might cite as an example Professor James B. Beard's "Turf Management for Golf Courses", published by the USGA in 1982. From a British point of view how-ever, the value of this definitive textbook is limited by the climatic, environmental and managerial differences which exist between the US and UK golf course scenarios, and a specifically British contribution to the literature is therefore an obvious requirement..."

"The editors of the current work however, feel that a general (and not too technical) book giving reason-ably detailed information on the range of greenkeeping problems which arise in British golf course management will be of value to all individuals involved in this exciting and demanding task".

In providing such a splendid compendium of articles - features that prove not only invaluable but offer ammunition that can dispel the many 'crackpot' theories voiced by 'knowledgeable members' - the editors have succeeded in doing just that, and as such the book can be thoroughly recommended.

"If I have one major criticism, it is the tiresome (and inconsistent) mis-application of capital letters to place unqualified self importance on certain unnamed persons, eg. Members; Editors; Ladies; Chairmen; Green Committees; Ecologists; Conservationists; Architects; Agronomists and the rest, through greenkeepers and assistants (notably not head greenkeepers) apparently warrant no such elevation. I am an editor, you are course managers; head greenkeepers; greenkeepers or assistants, no capital warranted, the use incorrect. This anti-capitalist demands the return of 'capital' punishment." The Environment Officer (writes Jon Allbutt) is the inspector for golf clubs whose job it is to enforce aspects of environmental health. He/she has been given the power to enforce the Health and Safety at Work Act and Coshh in particular. From April this year he became responsible for enforcing the 'Pesticides Regulations'. This is a very new area of work and to help the inspector prepare for these new duties the Health and Safety Executive have prepared this excellent Open Learning Course.

The course is designed as a self learning package; set out in 17 sections of information with self assessment questions at the end of each section. It becomes a step by step guide to the Act and Regulations and would be ideal for the student, course manager, or indeed anyone who needs a good working knowledge of this important piece of Law.

The course manual contains flow charts, diagrams and charts that help with tricky areas - such as deciding which chemicals are subject to the Regulations; the routes for disposal of chemical waste and empty containers and the options available for the safe storage of pesticides.

The inspector will work of course follow the detail of this course 'to the letter' - at least until he/she has enough experience to use judgement when conducting an inspection. This is potentially bad news for the club that is not conforming to the Regulations; has not completed staff training; does not have a sprayer that meets the requirements; no proper pesticides store that meets the criteria set out in guidance note CS19, and has not completed Risk Assesments as required by the Coshh regulations.

This open learning package is not a substitute for the Code of Practice for the use of Approved Pesticides in Amenity Areas, rather it is a practical guide on how to comply with the Regulations.

• The Open Learning Course is available from HMSO bookshops and costs £16.

Many a 19th hole argument will be solved by searching the pages of the new edition of *Golf Rules Illustrated*, which is now updated to cover the new 1992 rules, revised in January.

An official publication of the R&A, this book presents the rules together with over 90 clear illustrations and is designed to provide an easier understanding of the rules. It concentrates in particular on those situations which cause most difficulty for the typical club golfer.

Obstructions, bunkers, out of bounds, lost balls, unplayable lies, water hazards, loose impediments, casual water - Golf Rules Illustrated will give a visual answer to these and many other problems. Quite simply, every golfer should be aware of the rules - why not carry a copy in your bag?

• *Golf Rules Illustrated* is published by Hamlyn at £7.99.

Golf Rules Explained, a highly acclaimed book now in its eighth edition, is widely acknowledged as the definitive work on the explanation and understanding of the rules of golf. This latest update includes commentary on the new 1992 rules.

"There are few games", wrote Country Life of the first edition, 'in which ignorance of the rules is so widespread as in golf. This is an observation on the game by one of its shrewdest observers and most gifted writers. He makes cogent comments and any golfer, however humble or eminent, could profit from reading it'.

The author enlivens his explanations (and warnings) with anecdotes from his long international experience, making 'Golf Rules Explained' an amusing and helpful aid to retain the rules in your memory. In his readable and enlighten ment clarification of the finer points of the rules of golf, Peter Dobereiner provides enough information to settle any dispute on the course.

Peter Dobereiner is one of our leading golf writers. He is equally well known in America as a correspondent of Golf Digest. In the UK he writes for Golf World. He travels the world reporting on major championship events, seldom hav-
Every Golf Club increasingly has conflicting calls placed upon its valuable working capital. So the need for a totally dedicated leasing service has never been greater.

Lease Management Services provides an exclusive range of competitive funding options to help Golf Clubs equip to meet the demands of the present day.

We also have extensive vehicle purchasing powers enabling us to source any car of your choice at advantageous prices.

So contact LMS today to discuss all of your equipment and vehicle requirements, and at a stroke your club could be enjoying these benefits...

NAME

POSITION

CLUB

ADDRESS

POSTCODE

TELEPHONE

Gl.10.92

LEASE MANAGEMENT SERVICES LIMITED, ESHER HOUSE, ESHER GREEN, ESHER, SURREY KT10 8BU.

TEL: 0372 467711 FREEFAX: 0800 282374

7 - ing time to play himself.
• Golf Rules Explained is published by David & Charles and costs £10.99

Jim Thorn, Wimbledon's famous turf specialist, has over 40 years experience in the preparation of grass tennis courts. His interesting little book The Lawns of Wimbledon may well be of interest to head greenkeepers, for it contains much that complements golfing turf.

He writes: 'All the information required for success in turf culture is already available in excellent textbooks, but no book applies itself solely to tennis. Bearing this in mind, I decided to combine information from textbooks with the experience and knowledge I have acquired over the years. I hope this will be of use to any person with a lawn, as well as to groundsman in general.

To produce top quality grass tennis courts you have to understand that grass is a living plant and that the soil which sustains it is far from being inert. The various seasons and the weather, with all its vagaries, will make enough demanding of your patience to its limits. Then there are the players and officials who will use and sometimes abuse your efforts. At Wimbledon we don't pretend to know everything: but we are professionals who take great pride in producing and presenting grass tennis courts which, in the world at large, are second to none.'

'The Lawns of Wimbledon' by Jim Thorn costs £5.75 including p+p and is available from the Wimbledon Lawn Tennis Museum, Church Rd., Wimbledon SW19 5AE.

Keeping the best until last, the new book The Anatomy of a Golf Course by Tom Doak deserves an honoured place amongst the classics of golf literature. Alongside such architectural masterpieces as Hunter's 'The Links', Simpson and Wethered's 'The Architectural Side of Golf', Cornish and Whitton's 'The Golf Course' and Fred. W. Hawtree's 'The Golf Course' by Tom Doak is available in Britain from Grant Books, Victoria Sq., Droitwich, Worcs. WR9 8DE, price £18 including p+p.

The Anatomy of a Golf Course by Tom Doak is available in Britain from Grant Books, Victoria Sq., Droitwich, Worcs. WR9 8DE, price £18 including p+p.

AD REF 971
Netlon Advanced Turf

For healthier, more durable turf

Netlon Advanced Turf is a rootzone system bringing unrivalled resilience, stability, durability and health to natural grass.

The unique reinforced rootzone allows the natural turf areas to withstand far greater use than ordinary turf.

Already in use in many golf courses, Netlon Advanced Turf gives a better wearing, more attractive surface. All forms of deep aeration techniques can be virtually eliminated as Netlon Advanced Turf’s self-cultivating action ensures that the rootzone resists soil compaction and remains healthy.

Suitable for tees, greens and walkways, Netlon Advanced Turf means lower maintenance costs and greater course usage - saving money whilst generating additional revenue.

Netlon Advanced Turf - happier golfers, contented greenskeepers.

For your colour brochure ring Emma Burns on 0800 585012 or return the coupon.

PHONE FREE - EMMA BURNS ON 0800 585012

Netlon Advanced Turf Systems, Kelly Street, Blackburn, England BB2 4PJ. Fax: 0254 684302.

Netlon is the registered trade mark of Netlon Limited in the USA, the UK & other countries.

Netlon Advanced Turf is patented in the USA, the UK & other countries.
Britain's greenkeepers are utterly divided. Not by accent; salary differentials; class; creed; religion; or the so-called north-south divide; but by a quirk of geology that splits our great country into 'them that have and them that haven't' - about water resources, that is!

To illustrate this point, early in September I talked to a golf club secretary in Kent, who told me the problems that have bedevilled his part of the south-east throughout the growing season. In his case the club was forced (first by swinging restrictions, then by a total ban) into a situation of having to purchase an additional tractor and a 1,200 gallon water bowser, at a cost exceeding £28,000, in order to transport final stage effluent (water one stage removed from domestic purity), bought at £5 per thousand gallons. He further explained that his club's location, just three miles from the Mid Kent Water sewage plant, made things somewhat easier in that he was able to employ just one member of the green staff to continually ferry back and forth and to distribute the effluent over the golf course. He pointed out that other clubs in Kent were less fortunate and were forced to rely upon contractors, often spending as much as £1,200 on effluent in a single week. As a result of such expenditure, some clubs have imposed an additional 'water levy' of a pound or two on all green fee paying visitors.

It comes as no consolation to those still banned clubs in the south-east to learn that the British trend is toward a wetter climate, with the 80s decade the wettest so far recorded.

The great water divide is, simply stated, one of distribution. From an imaginary line - say from Hartlepool to Weymouth - the north-west gets most rain, the south-east has more people, demands more water and has fewer suitable sites for reservoirs. It also gets less rain, even in winter.

Of even greater importance, the geological make-up of the north-west - high, hard and rocky ground sweeping down to deep valleys - provides ideal reservoir locations. The poor old south-east has softer rock - mostly chalk - which form the aquifers which absorb the lesser rainfall, storing it and eventually releasing it to rivers, boreholes and the like. About 17% of Britain's water comes from such aquifers, though our clubs in Kent, indeed much of the south and east, depend on aquifers as their only source.

To understand more fully the reasons behind continuing bans, we must set aside the fact that these are not causing problems at the moment just because rainfall has been abundant throughout August and September. Rainfall pattern records reveal that the east gets less rainfall in winter than in summer - period.

Grass and other plants need more moisture during the growing season (April-September) and any rainfall is voraciously absorbed, failing to recharge the aquifers. The drying out which occurs is known in scientific circles as a 'soil moisture deficit' (SMD), i.e. the amount of rain needed to soak the soil to a point where soil absorption is complete and aquifers can replenish.

Greenkeepers know that the SMD cannot increase indefinitely, for as the soil on golf courses dries out it becomes more difficult for turf to extract water and the playing surfaces begin to suffer and die. There has been nothing typical in the recent south eastern pattern of SMDs, which in normal times begin to increase in spring, rising to something over 100mm in July, declining through autumn and (usually) ended by November to bring about a recharging of aquifers or reservoirs.

Rain from the Atlantic have of late tended to skip Britain and the west-east shortfall has been added to by a lack of summer thunderstorms, resulting in SMDs that have lasted till early winter or even the following spring. In Kent and East Anglia, the SMDs of 1991 persisted throughout winter and the whole problem began again this spring.

The exceptional rainfall in early July and all of August has eased the problem - temporarily - and there are signs that reservoirs are being replenished. There have been some unusual irregularities in past droughts, as witness those of 1975/6 and 1984. The first dealt a severe blow to southern England, with Devon, Cornwall and Somerset particularly hard hit as their reservoirs dried up. The latter affected the whole country in a few months, though the usually rain-blessed north and west experienced greater problems than the south and east. It was not until the heavy rains of early autumn that depleted reservoirs were able to replenish, having been down to as low as 30% capacity.

Talking to a National Rivers Authority official recently, I was told that despite the present drought there is more available water in the aquifers than in all of the reservoirs of England and Wales, though its use to supply golf courses and country gardens is decried as being a contributory factor in the decline of wetland areas.

Returning to those unfortunate from the south east, especially Kent and East Anglia, there can be but cold comfort in knowing the tendency for rainfall is to increase in winter, for very heavy autumn and winter rainfalls are vital in the next six months to lift the threat of water shortages next year. Clubs in the south east remain defenceless should the forecasters have their sums wrong and the meagre 1991/2 recharge rate is repeated.

If all this sounds unduly pessimistic, there may be a light at the end of the tunnel. One safe and sure solution, always providing access to winter water is available, is winter storage for summer use. This is not without additional cost and should not be undertaken without early consultation with the NRA, who are developing considerable expertise in this field. Coupled with the taking of expert advice on building lakes or other catchment devices, this may well represent the only rescue package available.

DAVID WHITE