



# First International Conference on *Crop Wild Relative Conservation and Use*

**Incorporating the PGR Forum Final Dissemination Conference**

14-17 September 2005

Dioscuri Bay Palace Hotel, Agrigento, Sicily, Italy

## PROGRAMME



**UNIVERSITY OF  
BIRMINGHAM**



**REGIONE SICILIANA**



# **First International Conference on *Crop Wild Relative Conservation and Use***

**Incorporating the PGR Forum Final Dissemination Conference**

14-17 September 2005  
Dioscuri Bay Palace Hotel, Agrigento, Sicily, Italy

## **Programme**

**Compiled by:**

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**Front cover:**

Valley of the Temples, by Prof Giuseppe Barbera

**Front and back cover:**

*Prunus insititia* Jusl., by Dr Emilio Laguna



## INTRODUCTION

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**The First International Conference on Crop Wild Relative Conservation and Use** has been convened to bring together the international community to address the current status and future of crop wild relatives (CWR) as a vital resource for improving agricultural production, increasing food security, and sustaining the environment. For the first time, CWR will be highlighted as a critical but neglected resource. The Conference is a landmark in PGR conservation, and sets the scene for future international conferences and initiatives on CWR conservation and use.

The **specific objectives** of the Conference are to:

- Promote the importance of wild plant species of socio-economic value to the international community
- Review the establishment of CWR inventories and establish a baseline for their conservation assessment
- Assess procedures for establishing conservation priorities for CWR
- Review the current status of information access and management for CWR
- Evaluate methodologies for *in situ* and *ex situ* CWR conservation
- Explore ways of strengthening CWR conservation and use through international and inter-agency collaboration
- Disseminate PGR Forum products to the European and global PGR community, and discuss their wider application and continued use

To achieve these objectives, the three-day programme comprises **nine sessions**:

- CWR conservation and use: an overview
- Establishing CWR inventories and conservation priorities
- CWR threat and conservation assessment
- Genetic erosion and genetic pollution of CWR
- *In situ* management and monitoring for CWR
- *Ex situ* conservation of CWR
- CWR information management
- CWR as gene donors for crop improvement
- Use of CWR and under-utilised species

In addition, group and plenary discussions will formulate a **Global Strategy for CWR Conservation and Use** and the **Crop Wild Relative Specialist Group** of the Species Survival Commission of IUCN-The World Conservation Union will be inaugurated.

The Conference has been organised in association with the European Community funded project, European Crop Wild Relative Diversity Assessment and Conservation Forum (**PGR Forum**), which is funded by the Fifth Framework Programme for Energy, Environment and Sustainable Development (Project code: EVK2-2001-00192) and coordinated by the University of Birmingham, United Kingdom. The products of the PGR Forum project will therefore be presented at this conference.

### **Conference sponsors**

- European Community Fifth Framework Programme for Energy, Environment and Sustainable Development
- Agricultural Development Service, Regional Government of Sicily, Palermo, Italy
- University of Birmingham, United Kingdom
- International Plant Genetic Resources Institute
- Istituto Sperimentale per la Frutticoltura di Roma, Italy
- Agricultural Extension Service of the Regional Administration of Agrigento, Italy

### **Conference organisation**

- University of Birmingham, United Kingdom
- International Plant Genetic Resources Institute
- Istituto Sperimentale per la Frutticoltura di Roma, Italy
- Agricultural Extension Service of the Regional Administration of Agrigento, Italy

The Conference organisers are grateful to the following local organisations for generously providing their services in support of the Conference:

- Parco dei Templi
- Agrigento Tourist Service
- Municipality di Palma
- WWF Italy
- Agrigento Wine Association

### **Organising Committee**

- Mr Damiano Avanzato – CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy
- Dr Ignazio Vassallo – Agricultural Extension Service of the Regional Administration of Agrigento, Sicily, Italy
- Ms Shelagh Kell – University of Birmingham, United Kingdom
- Ms Katy Elphinstone – International Plant Genetic Resources Institute
- Dr Jozef Turok – International Plant Genetic Resources Institute
- Prof Carlo Fideghelli – CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy
- Prof Giuseppe Barbera – University of Palermo, Sicily, Italy

### **Scientific Programme Committee**

- Ms Shelagh Kell – University of Birmingham, United Kingdom
- Dr Nigel Maxted – University of Birmingham, United Kingdom
- Dr Brian Ford-Lloyd – University of Birmingham, United Kingdom
- Dr Jozef Turok – International Plant Genetic Resources Institute
- Dr Ehsan Dulloo – International Plant Genetic Resources Institute
- Mr Damiano Avanzato – CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy
- Prof José Iriondo – Universidad Politécnica de Madrid, Spain
- Ms Sabine Roscher – German Centre for Documentation and Information in Agriculture, Germany
- Mr Eliseu Bettencourt – Instituto Nacional de Investigação Agrária e das Pescas, Portugal
- Mr Craig Hilton-Taylor – IUCN/SSC Red List Programme, United Kingdom

### **Conference Assistants**

University of Birmingham, United Kingdom:

- Ms Maria Scholten
- Ms Joana Magos Brehm
- Ms Marianne Mitchell
- Ms Cristina Sousa Correia

CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy:

- Mr Mario Izzo
- Mr Giuseppe Cambiano

Soat86, Licata, Italy:

- Mr Umberto Mulè
- Mr Salvatore Morinello

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## Programme Summary

### Tuesday 13 September

12:00-17:00	Registration
17:00	Welcome cocktail at the Palazzo del Gattopardo and visit to the Castle of Palma di Montechiaro

### Wednesday 14 September

08:00	Final registrations
08:30	Opening session
09:00	Session 1. CWR conservation and use: an overview
10:50	Session 2. Establishing CWR inventories and conservation priorities
15:50	Session 3. CWR threat and conservation assessment
19:00	Stoai Greek Theatre production, followed by typical Sicilian pizza and traditional folk music performed by "Val d'Akragas"

### Thursday 15 September

08:30	Session 4. Genetic erosion and genetic pollution of CWR
10:50	Session 5. <i>In situ</i> management and monitoring for CWR
16:00	Session 6. <i>Ex situ</i> conservation of CWR
18:30	Tour of the Valley of Temples, followed by dinner at the Kolymbetra Garden

### Friday 16 September

08:30	Session 7. CWR information management
11:40	Session 8. CWR as gene donors for crop improvement
14:20	Session 9. Use of CWR and under-utilised species
16:50	Towards a global strategy for CWR conservation and use
17:50	Closing session
19:00	Traditional dinner with Sicilian music at the Farm of "Volpara (del Vuccazza)"

### Saturday 17 September

Conference excursion

### Poster presentations

Posters are displayed in the main lobby of the hotel, organised according to session topics.

## ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 1	Wednesday 14 September		
<b>08:30</b>	<b>Opening Session</b>	<b>Chair: Jozef Turok, International Plant Genetic Resources Institute</b>	
08:30	Welcome address	Dario Cartabellotta	Regional Government of Sicily, Italy
08:40	Welcome address	Damiano Avanzato	CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy
08:45	Welcome address	Nigel Maxted	University of Birmingham, United Kingdom
08:50	Opening address	Emile Frison	International Plant Genetic Resources Institute
<b>09:00</b>	<b>Session 1. CWR conservation and use: an overview</b>	<b>Chair: Wieslaw Podyma, Ministry of Agriculture and Rural Development, Poland</b>	
09:00	CWR conservation and use: establishing the context	Nigel Maxted <sup>1</sup>	University of Birmingham, United Kingdom
09:30	Addressing the conservation and sustainable utilisation of CWR: the international policy context	Linda Collette <sup>2</sup>	Food and Agriculture Organisation of the United Nations
09:50	CWR conservation: European policy and information context	Dominique Richard	European Topic Centre on Nature Protection and Biodiversity, France
10:10	Plant genetic resources national programmes in Armenia: current state and prospects	Alvina Avagyan <sup>3</sup>	Ministry of Agriculture, Armenia
<b>10:30</b>	<b>Coffee</b>		

<sup>1</sup> Maxted, N., S.P. Kell and B.V. Ford-Lloyd

<sup>2</sup> Azzu, N. and L. Collette

<sup>3</sup> Avagyan, A. and S. Avetisyan

## ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 1	Wednesday 14 September (continued)		
10:50	<b>Session 2. Establishing CWR inventories and conservation priorities</b>	<b>Chair: Karl Hammer, University of Kassel, Germany</b>	
10:50	Creating a regional catalogue of crop taxa and their wild relatives: a methodology illustrated for Europe and the Mediterranean	Shelagh Kell <sup>4</sup>	University of Birmingham, United Kingdom
11:20	Establishing conservation priorities for CWR	Brian Ford-Lloyd <sup>5</sup>	University of Birmingham, United Kingdom
11:50	Construction and use of a national inventory of CWR: a methodological case study for the United Kingdom	Maria Scholten <sup>6</sup>	University of Birmingham, United Kingdom
12:10	CWR <i>in situ</i> conservation strategy for Russia	Tamara Smekalova	N.I. Vavilov Institute of Plant Industry, Russia
<b>12:30</b>	<b>Lunch</b>		
13:30-13:50	Council Regulation (EC) No 870/2004 on Genetic Resources in Agriculture and the Community Programme	Olivier Diana	European Commission, Directorate General for Agriculture and Rural Development, Environment and Forest Unit, Belgium
14:00	CWR species in Finland: diversity, conservation, and taxa of special interest	Helena Korpelainen <sup>7</sup>	University of Helsinki, Finland
14:20	A survey of the distribution of CWR in the Netherlands	Roel Hoekstra <sup>8</sup>	Centre for Genetic Resources, Netherlands
14:40	European forest genetic resources: status of current knowledge and conservation priorities	François Lefèvre <sup>9</sup>	Institut National de la Recherche Agronomique, France
15:00	Using GIS models to identify the predictive potential suitable sites of wheat wild relatives in the Palestinian Authority areas	Haitham Hasasneh <sup>10</sup>	Conservation and Sustainable Use of Dry Land Agrobiodiversity Project, Palestine
15:20	Questions and discussion		
<b>15:30</b>	<b>Coffee</b>		

<sup>4</sup> Kell, S.P., H. Knüpffer, S. L. Jury, B.V. Ford-Lloyd and N. Maxted

<sup>5</sup> Ford-Lloyd, B.V., N. Maxted and S.P. Kell

<sup>6</sup> Scholten, M., N. Maxted, R. Codd, S.P. Kell, J. Magos Brehm and B.V. Ford-Lloyd

<sup>7</sup> Korpelainen, H., S. Takaluoma, M. Pohjamo and J. Helenius

<sup>8</sup> Veller, M.G.P. van, R. Hoekstra and B. Odé

<sup>9</sup> Lefèvre, F., E. Collin, B. De Cuyper, B. Fady, J. Koskela, J. Turok and G. von Wühlisch

<sup>10</sup> Allahham, S. and H. Hasasneh

### ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 1			
Wednesday 14 September (continued)			
15:50	<b>Session 3. CWR threat and conservation assessment</b>	<b>Chair: José Iriondo, Universidad Politécnica de Madrid, Spain</b>	
15:50	CWR threat and conservation assessment: overview	Craig Hilton-Taylor	IUCN Species Programme, United Kingdom
16:20	National approach for CWR red listing: is it as difficult as we think?	Joana Magos Brehm <sup>11</sup>	University of Birmingham, United Kingdom Jardim Botânico, Museu Nacional de História Natural, Portugal
16:40	Traditional farming systems in south-eastern Turkey: the imperative of <i>in situ</i> conservation of endangered wild annual <i>Cicer</i> species	Shahal Abbo <sup>12</sup>	The Hebrew University of Jerusalem, Israel
17:00	<i>Ex situ</i> conservation of CWR: representativeness and biases in genebank collections	Mauricio Parra-Quijano <sup>13</sup>	Universidad Politécnica de Madrid, Spain
17:20	Questions and discussion		
17:30	<b>Towards a global strategy for CWR conservation and use: introduction</b>	<b>Vernon Heywood, University of Reading, United Kingdom</b>	
17:50	<b>Close of day 1</b>		

<sup>11</sup> Magos Brehm, J., M. Mitchell, N. Maxted, B. Ford-Lloyd and M.A. Martins-Loução

<sup>12</sup> Lev-Yadun, S., C. Can, S. Abbo and M. Ozaslan

<sup>13</sup> Parra-Quijano, M. D. Draper, M.E. Torres and J.M. Iriondo

## ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 2	Thursday 15 September		
08:30	<b>Session 4. Genetic erosion and genetic pollution of CWR</b>	<b>Chair: Isaak Rashal, University of Latvia, Latvia</b>	
08:30	Genetic erosion and genetic pollution of CWR: the PGR Forum perspective and achievements	Eliseu Bettencourt <sup>14</sup>	Instituto Nacional de Investigação Agrária e das Pescas (INIAP), Portugal
09:00	Assessing the potential for ecological harm from gene flow to CWR	Mike Wilkinson	University of Reading, United Kingdom
09:20	Characterization of indigenous wild grapevine in France	Thierry Lacombe <sup>15</sup>	UMR Diversité et Génomes des Plantes Cultivées, Equipe "Génétique Vigne", France
09:40	Reciprocal introgression between wild and cultivated taxa of the peach palm ( <i>Bactris gasipaes</i> , Arecaceae) in Western Ecuador	Thomas Couvreur <sup>16</sup>	Wageningen University, National Herbarium, Netherlands
10:00	Impoverishment of the gene pool of the genus <i>Aegilops</i> L. in Armenia	Margarita Harutyunyan <sup>17</sup>	Armenian Agricultural Academy, Armenia
10:20	Questions and discussion		
<b>10:30</b>	<b>Coffee</b>		

<sup>14</sup> Bettencourt, E., B.V. Ford-Lloyd and S. Dias

<sup>15</sup> Lacombe, T., M. Di Vecchi, L. Bordenave, J-M. Boursiquot, A. Carbonneau, A. Bronner, T. Bourse, D. Varès and P. This

<sup>16</sup> Couvreur, T.L.P., C. Lara, B. Ludeña, J. -L. Pham and J-C Pintaud

<sup>17</sup> Harutyunyan, M., A. Avagyan and M. Hovhanissyan

### ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 2 Thursday 15 September (continued)			
10:50	Session 5. <i>In situ</i> management and monitoring for CWR	Chair: Åsmund Asdal, Norwegian Crop Research Institute, Norway	
10:50	CWR <i>in situ</i> management and monitoring: the time has come	José Iriondo	Universidad Politécnica de Madrid, Spain
11:20	Does agriculture conflict with <i>in situ</i> conservation? A case study on the use of wild relatives by yam farmers in Benin	Nora Scarcelli <sup>18</sup>	Institut de Recherche pour le Développement, France
11:40	Management plans for promoting <i>in situ</i> conservation of local agrobiodiversity in the West Asia centre of diversity	Nawwaf Al-Atawneh <sup>19</sup>	Conservation and Sustainable Use of Dry Land Agrobiodiversity Project, Palestine
12:00	<i>In situ</i> conservation strategy for wild Lima bean ( <i>Phaseolus lunatus</i> L.) populations in the Central Valley of Costa Rica: a case study of short-lived perennial plants with a mixed-mating system	André Toussaint <sup>20</sup>	Unité de Phytotechnie tropicale et d'Horticulture, Sciences agronomiques de Gembloux, Belgium
12:20	Questions and discussion		
12:30	Lunch		

<sup>18</sup> Scarcelli, N. S. Tostain, C. Agbangla, O. Daïnou, M. Nasser Baco and J.L. Pham

<sup>19</sup> Amri A., N. Al-Atawneh, R. Assi and N. Maxted

<sup>20</sup> Baudoin, J-P., O. J. Rocha, J. Degreef, I. Zoro Bi, M. Ouédraogo, L. Guarino and A. Toussaint

## ORAL SESSIONS

Day 2	Thursday 15 September (continued)		
14:00	Population performance of <i>Arnica montana</i> in different habitats in Lithuania	Juozas Labokas <sup>21</sup>	Institute of Botany, Lithuania
14:20	A designated nature reserve for <i>in situ</i> conservation of the wild emmer wheat ( <i>Triticum dicoccoides</i> ) in northern Israel	Didi Kaplan	Israel Nature and Parks Authority, Israel
14:40	Potential for integration of wild plants and landrace conservation within farming systems	Valeria Negri <sup>22</sup>	Università degli studi di Perugia, Italy
15:00	<b>Towards a global strategy for CWR conservation and use</b>	<b>Group discussions: session 1 Chair: Vernon Heywood, University of Reading, United Kingdom</b>	
15:40	<b>Coffee</b>		
16:00	<b>Session 6. <i>Ex situ</i> conservation of CWR</b>	<b>Chair: Daniela Benedikova, Research Institute of Plant Production, Slovak Republic</b>	
16:00	EURISCO a window on Europe's plant genetic diversity: Overview of European CWR collections	Sónia Dias <sup>23</sup>	International Plant Genetic Resources Institute
16:20	<i>Ex situ</i> conservation of wild species: the botanic garden perspective	Paul Smith	Millennium Seed Bank, Royal Botanic Gardens, United Kingdom
16:40	Conservation of Spanish wild oats: <i>Avena canariensis</i> , <i>A. prostrata</i> and <i>A. murphyi</i>	Pedro García <sup>24</sup>	Universidad de León, Spain
17:00	Analysis of wild <i>Lactuca</i> genebank accessions and implication on wild species conservation	Tatjana Sretenovic Rajjic <sup>25</sup>	The Institute of Plant Genetics and Crop Plant Research, Gaterslaben, Germany
17:20	The role of botanic gardens in the conservation of CWR	Suzanne Sharrock <sup>26</sup>	Botanic Gardens Conservation International, United Kingdom
17:40	Questions and discussion		
17:50	<b>Establishment of the CWR Specialist Group of the IUCN Species Survival Commission</b>	<b>Ehsan Dulloo, Nigel Maxted</b>	
18:10	<b>Close of Day 2</b>		

<sup>21</sup> Radussien, J. and J. Labokas

<sup>22</sup> Negri, V., F. Branca and G. Castellini

<sup>23</sup> Dias, S. and S. Gajji

<sup>24</sup> García, P., L.E. Sáenz de Miera, F.J. Vences, M. Benschacho and M. Pérez de la Vega

<sup>25</sup> Sretenovic Rajjic, T. and K.J. Dehmer

<sup>26</sup> Wyse Jackson, D. and S. Sharrock

### ORAL SESSIONS

(PGR Forum dissemination papers are highlighted in light blue)

Day 3 Friday 16 September			
08:30	<b>Session 7. CWR information management</b>	<b>Chair: Stephen Jury, University of Reading, United Kingdom</b>	
08:30	<i>In situ</i> data management methodologies: an overview	Sabine Roscher	German Centre for Documentation and Information in Agriculture (ZADI), Germany
09:00	Creation and development of the PGR Forum Crop Wild Relative Information System (CWRIS)	Jay Moore <sup>27</sup>	Plantkind Consulting, United Kingdom
09:30	CWR in the ECP/GR Central Crop Databases: a case study in <i>Beta</i> and <i>Avena</i>	Christoph Germeier <sup>28</sup>	Federal Centre for Breeding Research on Cultivated Plants (BAZ) - Gene Bank, Germany
09:50	CWR information: presenting a tool for its management and use	Ehsan Dulloo <sup>29</sup>	International Plant Genetic Resources Institute
10:10	Managing passport data associated with seed collections from wild populations: increasing potential for conservation and use of CWR in Israel	Rivka Hadas <sup>30</sup>	Israeli Gene Bank, Israel
10:30	Questions and discussion		
10:40	<b>Coffee</b>		
11:00	<b>Towards a global strategy for CWR conservation and use</b>	<b>Group discussions: session 2 Chair: Vernon Heywood, University of Reading, United Kingdom</b>	

<sup>27</sup> Kell, S.P., J. Moore, J.M. Iriondo, M.A. Scholten and N. Maxted

<sup>28</sup> Germeier, C. and L. Frese

<sup>29</sup> Thormann, I., K. Durah, S. Gaiji, A. Lane, T. Hodgkin and M.E. Dulloo

<sup>30</sup> Hadas, R. M. Agami and A. Horovitz

## ORAL SESSIONS

Day 3			
Friday 16 September (continued)			
11:40	Session 8. CWR as gene donors for crop improvement	Chair: Lothar Frese, Federal Centre for Breeding Research on Cultivated Plants, Germany	
11:40	Using crop wild relatives for crop improvement: trends and perspectives	Toby Hodgkin <sup>31</sup>	International Plant Genetic Resources Institute
12:10	The secondary genepool of <i>Hordeum</i> as gene donor for crop improvement	Margaret Scholz <sup>32</sup>	Federal Centre for Breeding Research on Cultivated Plants (BAZ) - Institute of Agricultural Crops, Germany
<b>12:30</b>	<b>Lunch</b>		
14:00	Exploitation of wild cereals for wheat improvement in the Institute for Cereal Crops Improvement	Eitan Millet <sup>33</sup>	Tel Aviv University, Israel
14:20	Using CWR as sources of useful genes	Gabiella Sonnante <sup>34</sup>	Institute of Plant Genetics, Bari, Italy
14:40	Questions and discussion		

<sup>31</sup> Hajjar, K. and T. Hodgkin

<sup>32</sup> Scholz, M., B. Ruge-Wehling, A. Habekuß, G. Pendinen, K. Flath, E. Große and P. Wehling

<sup>33</sup> Millet, E., J. Manisterski and P. Ben-Yehuda

<sup>34</sup> Sonnante, Gabriella and D. Pignone

## ORAL SESSIONS

<b>Day 3</b>	<b>Friday 16 September (continued)</b>		
<b>14:50</b>	<b>Session 9. Use of CWR and under-utilised species</b>	<b>Chair: Zdenek Stehno, Research Institute for Crop Production, Czech Republic</b>	
14:50	The use and economic potential of wild species: an overview	Vernon Heywood	University of Reading, United Kingdom
15:20	Minor crops and underutilized species: lessons and prospects	Stefano Padulosi <sup>35</sup>	International Plant Genetic Resources Institute
<b>15:40</b>	<b>Coffee</b>		
16:00	Conservation and use of medicinal plants in Sri Lanka: an overview	Champika Kariyawasam <sup>36</sup>	Biodiversity Secretariat, Ministry of Environment and Natural Resources, Sri Lanka
16:20	Use of wild plant species: the market perspective	Susan Curtis	Neals Yard Remedies, United Kingdom
16:40	Questions and discussion		
<b>16:50</b>	<b>Towards a global strategy for CWR conservation and use</b>	<b>Group presentations, discussion and approval Chair: Vernon Heywood, University of Reading, United Kingdom</b>	
<b>17:50</b>	<b>Closing ceremony</b>	<b>Chair: Carlo Fideghelli, CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy</b>	
<b>18:00</b>	<b>Close of Day 3</b>		

<sup>35</sup> Padulosi, S. and I. Hoeschle-Zeledon

<sup>36</sup> Ratnayakean, S.S. and C.S. Kariyawasam

## POSTER PRESENTATIONS

The institutes listed are those of the first authors

<b>PGR Forum crop wild relative case studies</b>		
Ecotypic exploration and characterization trials to promote conservation of <i>Arnica montana</i> L. in Northern Europe	Asdal, Å., J. Labokas, K. Olsson, J. Radušienė and K.W. Bladh	Norwegian Crop Research Institute, Norway Institute of Botany, Lithuania
<i>Avena strigosa</i> , a threatened crop wild relative of a historical crop	Podyma, W., M. Scholten and E. Bettencourt	Ministry of Agriculture and Rural Development, Poland
<i>Lupinus hispanicus</i> Boiss. & Reut. in the Iberian Peninsula: a crop wild relative traditionally harvested for fodder	Iriondo, J.M., L. De Hond and M. Parra	Universidad Politécnica de Madrid, Spain
The PGR Forum Crop Wild Relative Information System (CWRIS): information management for CWR populations, illustrated with case studies	Kell, S.P., J. Iriondo, N. Maxted, J. Moore, M. Scholten, A. Asdal, L. Frese, J. Labokas and Z. Stehno	University of Birmingham, United Kingdom
<i>Allium schoenoprasum</i> subsp. <i>sibiricum</i> in Central and Northern Europe	Stehno, Z.	Research Institute for Crop Production, Czech Republic
<i>Linum dolomiticum</i> Borbás, a strictly protected wild relative of cultivated flax in Hungary	Vörösváry, G., L. Holly and L. Udvardy	Institute for Agrobotany, Hungary
<b>Session 1. CWR conservation and use: an overview</b>		
The Italian national program to implement the International FAO Treaty on plant genetic resources for food and agriculture	Izzo, M., D. Avanzato and C. Fideghelli	CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy
<b>Session 2. Establishing CWR inventories and conservation priorities</b>		
Genetic diversity and phylogeographic structure of the genus <i>Vitis</i> : implications for conservation	Aradhya, M., B.H. Prins, G. S. Dangl, C. J. Simon and E. Stover	USDA Germplasm Repository, United States of America
Collecting of wild species in the National park Muran Plain	Benedikova, D. and P. Hauptvogel	Research Institute of Plant Production, Slovakia
Wild relatives for stone and pipe fruits and nuts in Georgia	Bobokashvili, Z., V. Kvaliashvili and K. Dzeria	Georgian Research Institute of Horticulture, Viticulture and Oenology, Georgia
Improvement exploitation and preservation of Sicilian vegetable genetic resources	Cartabellotta, D., and G. Spartà	Agriculture and Forestry Dept, Regional Government of Sicily, Italy

<b>Session 2. (continued) Establishing CWR inventories and conservation priorities</b>		
CWR: grapevine, small and minor fruits in Georgia (The Caucasus)	Chkhartishvili, N., D. Maghradze, K. Gogishvili and R. Tchipashvili	Georgian Research Institute of Horticulture, Viticulture and Oenology, Georgia
An overview on plant genetic resources in Albania, especially on crop wild relatives	Hyso, As Milto, A. Salillari and T. Dishinica	Ministry of Agriculture and Food, Albania
Investigation on trees biodiversity, growing in the Templum Valley of Agrigento	Leto Barone, G., C. Liotta and R. Sciaratta	Parco Archeologico e Paesaggistico della Valle dei Templi di Agrigento, Italy
Concept for establishing an inventory of CWR in Germany	Roscher, S	Information Centre for Biological Diversity, IBV, Germany
Conservation and utilization of officinal species germplasm in Sicily (Italy)	Tuttolomondo T., S. La Bella, I. Cammalleri, C. Leto, M. Licata and G. Gaeta	University of Palermo, Italy
Conservation priorities for crop wild relatives in Hungary	Vörösváry, G., L.Holly and L.Horváth	Institute for Agrobotany, Hungary
<b>Session 3. CWR threat and conservation assessment</b>		
<i>Helichrysum arenarium</i> (L.) Moench conservation in Estonia	Pihlik, U.	University of Tartu, Estonia
<b>Session 4. Genetic erosion and genetic pollution of CWR</b>		
The relationship between the agriculture modernization and the fruit genetic erosion observed by analysing the plants offer from the nurseries catalogues	Avanzato, D. and E. Raparelli	CRA - Istituto Sperimentale per la Frutticoltura di Roma, Italy
The importance of Sicilian phanerophytes as wild relatives of crop woody plants	Barbera, G., T. La Mantia and S. Pasta	Dipartimento di Colture Arboree - Università degli Studi di Palermo, Italy
On the conservation of the endangered European crab apple ( <i>Malus sylvestris</i> ): threats from hybridization with domesticated apple ( <i>Malus × domestica</i> )	Larsen, A. S., C. B. Asmussen, E. Coart, D. C. Olrik and E. D. Kjær	Forest and Landscape, The Royal Veterinary and Agricultural University, Denmark

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Monitoring of fruit wild relatives in Albania	Çarka, F., I. Çiçi , B. Ferraj and V. Vorpsi	Research Institute of Fruit Trees, Universiteti Bujqesor Koder Kamez Tirane, Albania
Native litchi and their wild relatives: taxonomy gap, <i>in situ</i> conservation plan in Vietnam	Hoa, T.T. and L.T. Dinh	Institute of Agricultural Genetics, Vietnam
Temporal genetic variation in wild emmer wheat	Ozlem O., E. Millet, Y. Anikster, O. Arslan and M. Feldman	Dept. Plant Sciences, Weizmann Inst. Science, Rehovot, Israel / Inst. of Science and Technology, Gazi Univ., Ankara, Turkey
Microsatellites as a model for decision making in <i>in situ</i> management of wild beets	Poulsen, G., N. Syde and L. Dafgård	Danish Institute of Agricultural Sciences, Denmark
Identification of valuable populations of the widely distributed crop wild relatives using <i>Rubus idaeus</i> L. as an example	Ryabova, D.	N.I. Vavilov Research Institute of Plant Industry, Russia
<i>In situ</i> conservation in Peneda-Gerês National Park of Gerês lily ( <i>Iris boissieri</i> ), wild daffodil ( <i>Narcissus pseudonarcissus</i> subsp. <i>nobilis</i> ) and bastard balm ( <i>Melittis melissophyllum</i> )	Silva, D. F. F. M., M. H. L. A. Tiago and A. S. C. Leite	Peneda-Gerês National Park, Portugal
Conservation and reintroduction of wild grapevine genetic resources in Tunisia: characterization by RAPD and SSR markers	Zoghalmi, N., A. Mliki, V. Laucou, T. Lacombe, P. This and A. Ghorbel	INRST, Laboratoire de Physiologie Moléculaire de la Vigne, Tunisia

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Session 6. <i>Ex situ</i> conservation of CWR		
Wheat wild relatives – a 25-year programme of <i>ex situ</i> conservation	Anikster, Y. and J. Manisterski	Institute for Cereal Crops Improvement, Tel Aviv University, Israel
A national Italian network to improve seed conservation of wild native species ('RIBES')	Bonomi, C., G. Rossi and G. Bedini	Giardino Botanico Alpino 'Viotte', Museo Tridentino di Scienze Naturali, Italy
Conservation and characterization of <i>Myrtus communis</i> germplasm	Bruna, S., C. Cervelli, A. Mercuri and B. Ruffoni	C.R.A. Istituto Sperimentale per la Floricoltura, Italy
Tissue culture as a tool for <i>ex situ</i> conservation of wild pear: the role of exogenous carbohydrates	Caboni, E., M.A Palombi., C. Damiano and A. Frattarelli	CRA – Istituto Sperimentale per la Frutticoltura, Italy
Seed conservation studies in rare and threatened wild relatives of citrus in Australia	Hamilton, K.N., S.E. Ashmore and R.A. Drew	Centre for Forestry and Horticultural Research, Griffith University, Australia
Crop wild relatives in the Dutch genebank: importance and use	Hoekstra, R., W. van Dooijeweert and I.W. Boukema	Centre for Genetic Resources (CGN), The Netherlands
<i>Ex situ</i> conservation of crop wild relatives in Hungary	Holly, L. G. Vörösváry and L. Horváth	Institute for Agrobotany, Hungary
Seed collections from nature for <i>ex situ</i> conservation	Horovitz, A.	Department of Genetics, The Hebrew University of Jerusalem, Israel
Cryopreservation as a method of potato germplasm storage in gene bank	Kryszczuk, A. and E. Zimnoch-Guzowska	Plant Breeding and Acclimatization Institute (IHAR), Poland
The CNR Gene Bank of Bari Activities in Crop Wild Relatives	Perrino, P., V.F. Tomaselli, M. Terzi, G. Sarli, G. Maruca, L. Mallardi, I. Scarascia, M. Scarascia, P. Cataldo, K. Hammer and D. Lafiandra	Consiglio Nazionale delle Ricerche, Plant Genetic Institute (ex Germplasm Institute), Bari, Italy
Studies on WCR at the Institute of Plant Genetics	Pignone, D. and L. Monti	CNR – Institute of Plant Genetics, Italy
Genetic structure of island populations of wild cardoon [ <i>Cynara cardunculus</i> L. var. <i>sylvestris</i> (Lamk) Fiori] detected by AFLPs and SSRs	Portis, E., A. Acquadroa, C. Cominoa, G. Mauromicaleb and S. Lanteria	Di.Va.P.R.A. Plant Genetics and Breeding University of Turin, Italy
The role of the Mediterranean species Botanic Garden (Agrigento district) played with the conservation and the valuation of the native botanic species	Sortino, M. , A. La Mantia and S. Sortino	Laboratorio di Biologia vegetale Applicata, Palermo University, Italy

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Session 8. CWR as gene donors for crop improvement		
The contribution of C.R.A. – “Istituto Sperimentale per la Floricoltura” – Palermo section to the conservation and exploitation of the native germplasm: the wild species collections of the <i>Limonium</i> genus (Plumbaginaceae) present in Sicily	Aprile, S. and A. La Mantia	C.R.A. – Istituto Sperimentale per la Floricoltura, Italy
Commercial utilization of the widespread Cornelian cherry ( <i>Cornus mas</i> L.) population in Slovakia	Brindza, P., J. Brindza, D. Tóth and B. Stehliková	Slovak University of Agriculture in Nitra, Slovakia
Conservation of <i>Limonium</i> species and their use in a breeding program	Burchi, G. , E. Mercatelli, A. Mercuri, C. Bianchini and T.Schiva	C.R.A Ist. Sperimentale per la Floricoltura, Italy
The collection and conservation of wild mangifera species for the Improvement of the commercial mango ( <i>Mangifera indica</i> L.)	Campbell, R.	Center for Tropical Plant Conservation Fairchild Tropical Botanic Garden, United States of America
The wild olives of Sicily, their past and potential contribution to the improvement of the cultivated varieties	Cultrera G.M.N., L. Baldoni, A. Porceddu, C. Ricciolini and M.A. Germana	CNR - Institute of Plant Genetics, Division of Perugia, Italy
Canada yew ( <i>Taxus canadensis</i> Marsh.) and taxanes: a perfect species for field production and improvement through genetic selection	Daoust, G. and G. Sirois	Natural Resources Canada, Canadian Forest Service, Canada
Research on the volatile fraction in leaves of <i>Olea europaea</i> subsp. <i>oleaster</i> and <i>Olea europaea</i> subsp. <i>sativa</i>	Di Marco, L., Germanà M.A., Palazzolo E. and F. Saiano	Dipartimento S.EN.FI.MI.ZO. Sez. Frutticoltura, Università degli Studi di Palermo, Italy
Collecting and evaluation of wild <i>Medicago sativa</i> populations	Drobná, J. and P. Hauptvogel	Research Institute of Plant Production, Slovakia
Molecular and phytopathological characterization of natural populations of <i>Aegilops sharonensis</i> in Israel	Ezrati, S., E. Millet, J. Manisterski, P. Ben-Yehuda, M. Agami and Y. Anikster	Institute for Cereal Crops Improvement, Tel-Aviv University, Israel

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Session 8. (continued) CWR as gene donors for crop improvement		
Maintenance of and research on wild crop relatives at Department of Botany, Palacký University in Olomouc, Czech Republic	Lebeda, A., I. Doležalová, E. Křístková, B. Mieslerová, M. Duchoslav, P. Havránek and D. Vondráková	Department of Botany, Palacký University, Czech Republic
RAPD and ISSR fingerprinting in cultivated chickpea [ <i>Cicer arietinum</i> (L.)] and wild species	Linga S. Rao, P. Usha Rani, P. S. Deshmukh, P. A. Kumar and S. K. Panguluri	Division of Plant Physiology, Indian Agricultural Research Institute, India
Fingerprinting of Sicilian cherry germplasm with Simple Sequence Repeats and incompatibility (S) locus primers	Marchese, A., R. I. Bošković, J. Clarke, A. Motisi, A. Raimondo, K. R. Tobutt and T. Caruso	University of Palermo, Italy
Comparison of morphological characters in various accessions of <i>Solanum aethiopicum</i>	Oboh, B., O. Longe and C. Onejeme	Department of Cell Biology and Genetics, University of Lagos Akoka, Nigeria
Influence of water deficit on SOD and POD accumulation in wild and cultivated olive tree	Satta, D., G. Nieddu and I. Chessa	Centro Regionale Agrario Sperimentale, Italy
Utilization of Wild Relatives for commercial profitability in chickpea ( <i>Cicer arietinum</i> L.)	Yadav, S.S.	Division of Genetics, Indian Agricultural Research Institute, India

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Evaluation of underutilised <i>Solanum americanum</i> lines	Adetula, O.A.	National Horticultural Research Institute, Ibadan, Nigeria
Extraction of mulberry flavonoids for industrial and pharmacological use	Andreoni, N.	Dipartimento di Chimica e Biotecnologie Agrarie. Facoltà di Agraria. Università degli studi di Pisa, Italy
Diversity of wild and domesticated <i>Arracacia</i> species in Peru, as a unique reservoir to improve arracacha, one of the most promising Andean root and tuber crops	Blas Sevillano, R.H., A. Toussaint, M. Malice , M. Ghislain and J.P. Baudoin	Universidad Nacional Agraria La Molina, Peru
A methodology for conservation and sustainable use of the neglected/under-utilized tree species: <i>Q. ilex</i> subsp. <i>rotundifolia</i> (Lam) O. Schwarz.	Correia, Sousa, C.M., N. Maxted and B. Ford-Lloyd	School of Biosciences, University of Birmingham, United Kingdom
Identification and bio-agronomical study of seven biotypes of Azarole ( <i>Crataegus azarolus</i> L.)	Giorgio, A., A. Gallotta and P. Losciale	Department of Plant Production Science, Bari University, Italy
Genetic variation in and between wild populations of <i>Origanum syriacum</i> in Israel	Hadas R, O. Shmueli, S. Luhua A. Sirota, T. Kroitor, G. Galiliand and N. Dudai	Israeli Gene Bank, Israel
Diversity of under-utilized fruit species in West Bengal	Hasan, M.A and B.C.Das	Department of Fruits and Orchard Management, Bidhan Chandra Krishi Viswavidyalaya (Agricultural University), India
Establishment of a collection of <i>Salvia</i> with multipurpose potentialities	Ruffoni, B., C. Cervelli, A. Giovannini, C. Mascarello, M.C. Principato and A. Capponi	C.R.A. Experimental Institute for Floriculture, Italy
Domestication and field management trials of <i>Cicerbita alpina</i> (L.) Wallr.	Scartezzini, F., C. Vender, N. Aiello and P. Fusani	CRA-Istituto Sperimentale per l'Assestamento Forestale e per l'Alpicoltura, Italy

## EXCURSIONS AND SOCIAL EVENTS

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<b>Tuesday 13<sup>th</sup> September</b>	
<b>17:00</b>	<ul style="list-style-type: none"><li>– Departure from the Dioscuri Bay Palace Hotel</li><li>– Visit to the Castle of Palma di Montechiaro</li><li>– Welcome cocktail and buffet at the Palazzo del Gattopardo</li></ul>
<b>Wednesday 14<sup>th</sup> September</b>	
<b>19:00</b>	<ul style="list-style-type: none"><li>– Departure from Dioscuri Bay Palace Hotel</li><li>– Stoai Greek Theatre production</li><li>– Typical Sicilian pizza and traditional folk music performed by "Val d'Akragas"</li></ul>
<b>Thursday 15<sup>th</sup> September</b>	
<b>18:30</b>	<ul style="list-style-type: none"><li>– Departure from Dioscuri Bay Palace Hotel</li><li>– Tour of the Valley of Temples</li><li>– Dinner at the Kolymbetra Garden</li><li>– Presentation: "The cultural landscape of the Valle dei Templi in Agrigento" by Prof. Giuseppe Barbera, University of Palermo</li></ul>
<b>Friday 16<sup>th</sup> September</b>	
<b>19:00</b>	<ul style="list-style-type: none"><li>– Departure from Dioscuri Bay Palace Hotel</li><li>– Traditional dinner with Sicilian music at the Farm of "Volpara (del Vuccazza)"</li></ul>
<b>Saturday 17<sup>th</sup> September</b>	
<b>CONFERENCE EXCURSION</b> <b>Organised by Ignazio Vassallo, Head of the Agricultural Extension Service of Licata (Agrigento)</b>	
<b>08:30</b>	<ul style="list-style-type: none"><li>– Departure from Dioscuri Bay Palace Hotel</li><li>– Visit to the almond germplasm collection</li><li>– Tour of the house of Pirandello</li><li>– Visit to the WWF Siculiana Nature Reserve, "Reserva di Torre Salsa"</li></ul>
<b>16:00</b>	<ul style="list-style-type: none"><li>– Picnic lunch in the Reserve</li><li>– Arrival at Dioscuri Bay Palace Hotel</li></ul>

## **The germplasm collection: the way to save Sicilian almond biodiversity**

Ignazio Vassallo

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Every year the province of Agrigento celebrates the “Festival del mandorlo in fiore”. The almond has and continues to be very important in the region. A legend kept alive by the old people of the area tells how the almond tree is the beautiful legendary Fillide, a princess from Tracie (now located in Bulgaria) who was in love with the Greek Acamante, who took part in the war against Troy. At the end of the war, 10 years later, the young princess, disappointed because her lover did not return to her, and imagining that Acamante must have died in battle, let herself die too. The goddess Athena decided out of pity to transform Fillide in a marvellous tree of almond. But in fact Acamante had not died: his return had been delayed and when he understood that his love Fillide was transformed in almond tree, the only possible thing for him was to embrace the tree. The tree, returning his embrace, put forth flowers from its naked branches instead of leaves.

This is the miracle of the “La festa del mandorlo in fiore” which each year in February is repeated in the fantastic Templum valley, when the trees burst into flower, before any leaves appear, and the entire valley seems to be covered with a beautiful white mantle.

The older local people continue to remember this legend and the fact that in the 1950s Agrigento was the first almond producer in the world, but the current situation shows that the almond orchards are decreasing. In 1950 around 37,000 ha were cultivated, while today the orchards cover only 10,000 ha.

To avoid the loss of several almond genotypes the Horticultural Dept of University of Palermo, the *Soprintendenza ai beni culturali* – the *Ente Parco della Valle dei Templi*, the *Provincia Regionale* and the *Regione Siciliana con l'Assessorato Agricoltura e Foreste*, have established 5 ha of germplasm collection located on one side of the Templum Valley where more than 300 varieties have been collected from different areas of Sicily, and are kept as a living almond museum. The Germplasm collection has been named after a Sicilian national expert of almond, Dr. Francesco Monastra, a scientist who recently passed away.

## The Kolymbetra in the Temple Valley, Sicily

Giuseppe Barbera

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The Temple Valley of Agrigento is an ample tableland next to the southern coast of Sicily. Toward south it is bounded by a hilly zone (so-called hill of the Temples for the presence of numerous Greek ruins belonging to the fifth century a.c.) and in its north by the high ground of Rupe Atenea and by the hill occupied by the contemporary city. In the east and west, there are two rivers, called the Akragas and the Hypsas, that define a fascinating cultural landscape, in which the ruins of the Greek civilization cohabit with the mixed traditional field of almond and olive trees. Pindaro in the fifth century b.c. sang Akragas, the ancient city, "the most beautiful city which belongs to the mortals".

The Garden of the Kolymbetra between the Temple of the Dioscuri and the Temple of Volcano, in 1999 has been granted in trust from the Region of Sicily to the FAI, the Italian National Trust and opened to the public.

Generally the site is identified with the "sumptuous basin" of which writes Diodoro Siculo, when describes the works "that embellished the city and the territory" completed by the slaves took after the battle of Himera (480 a.c.) against the Carthaginian: "these cut stones with which were not only the greatest temples of gods were built, but also were built the aqueducts for leading of water in the city. These aqueducts were called as their builder Feace. People from Agrigento also built a sumptuous basin that had the circumference of seven stadiums and the depth of twenty cubits in which were conducted water of the lakes and sources, becoming so a hatchery, that furnished many fish for feeding and for taste; and because of many swans flew down toward it, its sight was delightful. But subsequently neglected, it was obstructed, and finally, destroyed and the inhabitants transformed the whole region, that was fertile, into planted lands of grapevines, and other kind of trees, in order to draw incomes of it". In the first century, when Diodoro writes, the site of the basin already had the agricultural utilization that will maintain in the future and the presence of a reed thicket- in fact testified only in 1225, when a parchment writes some concession to the Bishop about a "land in which there was a reed thicket near to the caves of the giants" (the old name of the Temple of Jupiter) confirms the presence of a non dissimilar landscape from the actual one. The ancient possession of the area by the church, is at the origin of the denomination "Badia Bassa" or of "horti Abbatie" as in the XVI century writes the historian Fazello. More recent information we have from travelers of the Grand Tour that had chosen Agrigento for discovering classical antiquities. Swinburne in 1777 observes that the basin "now is dry and used as a garden", Saint-Non, in 1785, observes that "water still flows in this canal and irrigates some luxuriant gardens that occupy the bottom of the basin...runs in a small valley today that for its amazing fertility, it resembles to the valley of the Eden, or to a part of the Promised Land". In 1896 Vuillier observes that "the sight from the edges of the basin is superb. The ancient temples show their columns through the orange trees and beyond there is the endless sea. I have remained there for a long time, weak for hot weather, with the lost look among the trembling leaves that sparkle in the irregular puffs of the sea breeze and my wandering thought went back to past".

Today the Kolymbetra is considered as part of an historical rural landscape. The intervention of restore had the aim to preserve, conserving traditional species and cultivars and cultural techniques, the landscape of traditional agriculture, supporting with small interventions (pathways, rest places) the visit and the acquaintance of the site.

## The Reserve of Torre Salsa

Franco Galia

WWF Representative, Agrigento

Since the 1970s the WWF has been in the foreground for the defence of the Nature Reserve of Torre Salsa. At the end of the 1980s it promoted a national campaign which culminated with the acquisition of 8.4 ha of land within the Reserve, parts of which were on the coast. In 1991 the area was inserted in the regional project of the government of Sicily. Then on 19<sup>th</sup> June 2000 a decree was signed along with the convention that entrusted the Reserve's management to the WWF of Italy.

The Nature Orientated Reserve of Torre Salsa lies between the town of Siciliana Marina and Eraclea Minoa in an uncontaminated territory where the cliffs of gypsum intervene with limestone marl which are covered, now and then, with layers of clay.

The landscape, covered with typical herbaceous and bushy vegetation, is sometimes inaccessible while other times it permits access to the beautiful seashore through narrow paths found between the rocks. Here the sea is crystal clear while its shallow waters are blooming with typical flora and rich fauna. The landscape is delineated by soft terraces formed from the vast depression of the Pantano and from the morphology of the cliffs.

The reserve, which is extended about 6 km, is characterized by high tracts of coastline from where are manifested blue clay, calcareous stratifications of gypsum, white limy marl eroded by the Aeolian wind, forming projecting cliffs, and loose sand found in the lower tracts that makes up the coastal dunes. The ancient watch-tower of Torre Salsa is situated in the very heart of the Reserve and dominates the top of a small promontory where the process of erosion is more intense, and from which gleams white calcareous marl. In the shallow sea, there are indented rocky slabs which create an immense number of paths where the tiny fish dart quickly between the seaweeds and where the slow crustaceans find shelter. The landscape, which characterizes the coast is rich of natural forms, and has majestic perspective and chromatic contrasts.

The flora which find shelter in the step rock formation close to the sea where can it can escape forest fires and can exploit the singular micro-climate is of particular interest. The cliffs where the falcons nest, represent the best integral ecosystem of the reserve and are protected by an uneven morphology and by the unstable nature of the terrain. The evergreen Mediterranean shrub presents a remarkable variety of floral species. Different endemic species have been discovered, along the gorge of Monte Cupolone, like the agrigentine lavatera, different varieties of wild orchids, the iris and several examples of the Phoenician juniper. Vultures like porcupines, buzzards, kestrels, find shelter along the rocky walls of the cliffs.



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