

GDI Proposal: Les Courmettes, France

1. Executive Summary

Le Domaine des Courmettes (also known as Les Courmettes) is a site of exceptional biodiversity located in the southeast of France, approximately 30km east of Nice. It is officially recognised as a 'Zone Naturelle d'Intérêt Ecologique Faunistique et Floristique' and falls within the Parc Naturel Régional des Préalpes d'Azur. It also forms part of the Préalpes de Grasse Natura 2000 site which is designated under EU law for its great habitat diversity, richness in mammal species and importance for the conservation of Ursini's Viper (*Vipera ursinii*). Furthermore, the site owner and manager are seeking designation for Les Courmettes to become a French Regional Nature Reserve (Réserve Naturelle Régionale).

Les Courmettes is owned by the 'Amiral de Coligny' association which signed a management agreement with the conservation organisation, A Rocha France in 2008, who now manages the site with the aim of enhancing its already spectacular biodiversity whilst maintaining open public access, and undertaking scientific studies due to its high ecological interest. It falls within the Mediterranean Basin biodiversity hotspot and experiences a Mediterranean climate with a dry, hot summer and a mild, dry winter. There are high levels of precipitation in autumn and the beginning of spring and low levels throughout the rest of the year, although there can be high variability between years. However, its climate is also influenced by the Alps and it can experience drops in temperature as well as snow.

The site covers 600 hectares but its varied geology and altitude (from 424m to 1,248m a.s.l.) has led to a surprisingly high level of habitat diversity with a mixture of grasslands, scrub and forests as well as cliffs and rocky outcrops. The dominant habitat consists of Holm Oak (*Quercus ilex*) forest which includes a number of centuries' old, very large individual trees that are of interest to visitors as well as important for biodiversity. Clearing and grazing regimes maintain open areas within the forest, in which a diverse range of orchid species thrive.

The site incorporates a mountain peak (the 'Pic des Courmettes') which consists of cliffs orientated towards the northwest, unlike most cliffs in the pre-Alpine area which are normally orientated towards the south. This unique topography has created a wetter and cooler local microclimate and has resulted in three different vegetation types near the peak: 1) characteristic mountain woodlands with Beech (*Fagus sylvatica*), Hop-hornbeam (*Ostrya carpinifolia*) and Yew (*Taxus baccata*) trees; 2) flora associated with limestone outcrops and scree habitats; and 3) other Mediterranean flowering plants.

Lime-rich and impermeable clay soils have also given rise to a number of wetlands and temporary ponds that provide breeding habitat for amphibians such as the: Mediterranean Tree Frog (*Hyla meridionalis*), Agile Frog (*Rana dalmatina*), Common Toad (*Bufo bufo*), Common Parsley Frog (*Pelodytes punctatus*) and the Fire Salamander (*Salamandra salamandra*).

A number of mammals have been recorded at the site, including: Red Deer (*Cervus elaphus*), Roe Deer (*Capreolus capreolus*), Wild Boar (*Sus scrofa*), European Badger (*Meles meles*), European Hare (*Lepus europaeus*), Wolf (*Canis Lupus*), and Beech Martin (*Martes foina*), as well as various species of voles, shrews and bats. At least eighty bird species have been recorded at the site including fifteen birds of prey such as Golden Eagle (*Aquila chrysaetos*), Peregrine Falcon (*Falco peregrines*), Griffon Vulture (*Gyps fulvus*) and Eurasian Eagle-Owl (*Bubo bubo*). Twelve reptile species have also been recorded, including vipers and lizards.

A high number of insects have also been recorded at Les Courmettes, which is unsurprising given its location in the Provence-Alpes-Côte d'Azur region which is home to around a third of all the insect species in France, with between 15,000 and 20,000 species. Over 900 insects have been recorded so far on-site, from which it is estimated that 3,000 – 4,000 species are likely to be present. The insects recorded to date include a number of important species protected by law, such as the Spiked Magician

(*Saga pedo*), a type of cricket and the Rosalia Longicorn (*Rosalia alpina*), a type of beetle, both of which are classified as Vulnerable on the IUCN Red List of threatened species.

The primary aim of the management of the site is to study and protect the natural heritage of Les Courmettes whilst promoting responsible ecotourism. It is managed as a nature reserve whilst maintaining open public access in a sustainable manner. Grazing by sheep and goats contributes to the diversity of habitats by maintaining open areas and is managed carefully to ensure that it does not compromise the diversity of the fauna and flora.

A number of heritage buildings are also present which A Rocha France is renovating to maximise their use for events and as ecotourism accommodation. There is already a small public information centre and numerous events have already been organised on-site to encourage people to visit, increase awareness of its unique biodiversity and to publicise local sustainable enterprises. There is considerable potential to develop the facilities available and promote sustainable ecotourism, which would provide a long-term sustainable income stream to help support the conservation, educational and scientific research activities.

More information about the site is available on a dedicated website:

<http://courmettes.com/index.php/fr/le-domaine>

2. Area Characteristics

The site is located at: 43°43.072'N and 7°1.165'E. It is 600 hectares in size, situated within the local authority area of Tourrettes-sur-Loup (06140), approximately 30km east of the city of Nice in the Alpes-Maritimes district. It falls within the Préalpes de Grasse Natura 2000 site and has an altitude ranging from 424m to 1,248m. a.s.l. at its peak, known as the 'Pic des Courmettes'. Les Courmettes falls within the WWF Ecoregion 'Mediterranean Forests, Woodlands and Scrubs' 'Palearctic/Western Europe: Northeastern Spain and southern France'.

The site harbours an exceptional biodiversity and the high altitudinal range gives rise to a variety of habitats. Much of the site is dominated by evergreen Oak woodland, particularly '*Quercus ilex*', with a number of trees that are centuries old. There is evidence of ancient human settlements on the site, with standing stones and megaliths. The site is open to the public and can be reached by road up to a car park at 850m, where visitors can enjoy a panoramic view and find a small public information centre and a number of heritage buildings managed by A Rocha France.

3. Area Manager

Le Domaine des Courmettes has been owned by the 'Amiral de Coligny' association since 1920. In 2008, an agreement was signed between the owner and the conservation organisation A Rocha France (ARF) which gave ARF responsibility for site management in accordance with the nature conservation mission of the organisation.

ARF's site management aim is to study and protect the natural heritage of Les Courmettes whilst promoting responsible ecotourism. Management of the site, therefore, covers two aspects: 1) renovation and management of the heritage buildings, and 2) management of the natural areas. On-site activities to date include scientific research, management of natural areas, welcoming the public and environmental awareness. Both the site owner and the site manager are aiming for the site to be designated as a French Regional Nature Reserve (Réserve Naturelle Régionale). ARF's site management goals and its aim for the site to be designated as a Regional Nature Reserve are compatible with the 2012 Charte du Parc Naturel Régional des Préalpes d'Azur (Charter for the Regional Natural Park of the Préalpes d'Azur).

To meet its management aims, ARF is working with the following partner organisations:

- L’ONF (French Forestry Commission): responsible for management of the Préalpes de Grasse Natura 2000
- Parc Naturel Régional des Préalpes d’Azur: as Les Courmettes has potential to play an important role in environmental awareness-raising within the park
- CRPF (Centre Régional de la Propriété Forestière): provides advice to private forest owners
- Forestour: a network of forest owners helping to promote sustainable forest tourism at Les Courmettes
- Force 06: responsible for controlling forest fires with a surveillance point at Les Courmettes
- Animal breeders: help to manage the site by grazing local breeds of livestock
- La Société Communale de Chasse de Tourrettes-sur-Loup (Community Hunting Society of Tourrettes-sur-Loup): participates in the regulation of game hunting on site
- Côtes et Nature (coasts and nature): organises regular environmental awareness raising activities on the site
- A Rocha International: works in partnership on scientific studies relating to the impacts of climate change on biodiversity and carbon stocks

ARF was founded in 2000 and has substantial experience in delivering conservation from its work in the Ilon Marsh, near Arles in Provence, which successfully led to designation of this site as a Regional Nature Reserve in 2012. ARF led a consultation exercise for more than 200 individuals concerning the future of the Ilon Marsh area, which led to landowners bringing more than 1,000 hectares under sustainable wetland management.

ARF is a member of the A Rocha network of nineteen nationally-registered Christian conservation organisations which together share the mission: “*inspired by God’s love to engage in scientific research, environmental education and community-based conservation projects*”. They are coordinated by A Rocha International (ARI), a UK registered charity since 1983 which is leading the scientific studies at Les Courmettes. A Rocha is a member of IUCN, Eurosite, the European Habitats Forum, the Cambridge Conservation Forum and the IIED Poverty and Conservation Learning Group. Some recent achievements are:

- Completion of a project with Conservation International which led to the discovery of over 200 species new to science in Papua New Guinea
- Completion of a successful legal campaign to save the Alvor estuary in Portugal
- Reforestation of more than 120 hectares in Ghana through the Climate Stewards programme
- Establishment of a Tropical Forests Programme, a Mediterranean Conservation Science Programme and a Marine programme

4. Rapid Biodiversity Assessment

The geographical position of Les Courmettes with both Mediterranean and Alpine climatic and biogeographical influences, has given rise to a remarkable range of habitat types. Seven of the habitats found at the site are Natural Habitats of Community Interest according to the EU Habitats Directive, and two habitats are priorities for conservation action at the EU level, as shown in the table below:

Natura 2000 Habitat Types found at Les Courmettes		
Natura 2000 Habitat Code	Natural Habitats of Community Interest, listed in the EU Habitats Directive	EU Priority Habitat
	Open Areas	
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (<i>Festuco-Brometalia</i>) (important orchid sites)	Yes
6420	Mediterranean tall humid grasslands of the <i>Molinio-Holoschoenion</i>	

5130	<i>Juniperus communis</i> formations on heaths or calcareous grasslands	
	Wetlands	
3170	Mediterranean temporary ponds	Yes
	Forest Areas	
9340	<i>Quercus ilex</i> and <i>Quercus rotundifolia</i> forests	
	Rocky Outcrops and Cliffs	
8210	Calcareous rocky slopes with chasmophytic vegetation	
8130	Caves not open to the public	

This very diverse and important range of habitats, protected under EU law, has led to a rich and varied biodiversity with more than 400 plant species recorded; more than 900 insects identified to date (which suggests that 3,000 – 4,000 insect species are likely to be present); twelve reptiles; five amphibians; eighty birds and seventeen mammals. Further information on the species of interest is provided in Annex 1.

Strengths

- The outstanding biodiversity of the site, with a high diversity of habitats and species of ecological and scientific interest
- Its designation as a ‘Zone Naturelle d’Intérêt Ecologique Faunistique et Floristique’ and as part of an EU Natura 2000 site, giving it protection under EU law
- The panoramic views, beauty of the site and its full open access means that it is already popular with ramblers and hikers as well as being well-known and loved by the local community
- The site is managed by ARF in line with its nature conservation mission, which means that use and management is limited to activities that benefit biodiversity
- ARF already has good relationships with other partner organisations, stakeholders, organisations and the local community some of whom have been assisting as volunteers
- The presence of accommodation has allowed staff and volunteers to live on-site and respond quickly to any problems
- A public information centre has been established

Weaknesses

- Currently, the main weakness is the lack of sustainable revenue streams to fund the site management requirements
- The site can only be reached by car, not by public transport, and accessibility is limited to a single winding road which needs maintenance
- The heritage buildings need further renovations before they can properly be used for ecotourism purposes and generate substantial revenue

Opportunities

- The site is close to the city of Nice and the Côtes d’Azur which are extremely popular with tourists and well connected for international flights and trains. Combined with the potential of the attractive heritage buildings to be turned into a major ecotourism facility, there is an opportunity to generate sustainable sources of income in future to fund the ongoing conservation and management work
- There is interest in developing ecological scientific studies and a climate change and biodiversity monitoring and research project has already been established in partnership with A Rocha International
- The joint aim of the site owners and managers to have the site designated as a French Regional Nature Reserve (Réserve Naturelle Régionale)

Threats

- Natural growth of trees and shrubs threatens the priority grassland communities, unless regularly cleared

- Temporary pools are threatened by drying, silting and encroachment by vegetation, unless regularly cleared
- Dirt bikes and off-road vehicles sometimes illegally cross the area which damages vegetation and disturbs wildlife
- Overcrowding by visitors at peak periods can disturb livestock and wildlife, with plants and fungi being trampled or picked and rubbish being left on site
- Whilst hunting is important to keep the numbers of grazing animals in check, it also causes some problems in terms of disturbing other wildlife species
- Non-motorised flying vehicles are known to disturb birds especially those nesting on the cliffs as they often make use of the same thermal currents as species such as the Golden Eagle and Peregrine Falcon and disturbs their hunting activities.
- Some of the sites ancient archaeological features are being degraded by encroachment of vegetation, weathering and removal of stones by visitors.
- The Mediterranean region is particularly vulnerable to the impacts of climate change, with a warming and drying climate but the future impact of this on the biodiversity of Les Courmettes is still unknown.

5. Work Plan for Planning and Registration

Depending on the availability of funding, the following activities will be undertaken in the first year:

- 1) Essential practical conservation actions, including vegetation clearing to prevent encroachment of priority habitats
- 2) Development of scientific research and monitoring activities to increase knowledge and understanding of the impact of climate change on biodiversity and carbon stocks
- 3) Development of a site management plan
- 4) Continued activity to achieve recognition of the site as a Regional Nature Reserve

The management plan to be developed in year one, will include the following:

- Actions to maintain the diversity of habitats, fauna and flora and conserve priority habitats of European Community interest
- Actions to protect rare or threatened species
- Prevention of encroachment of vegetation on ancient archaeological features
- Maintenance of sustainable grazing and mowing regimes
- Continuation of scientific research and monitoring in partnership with A Rocha International to study the impacts of climate change on biodiversity
- Work with local and regional networks and authorities
- Actions to increase public environmental awareness and promote knowledge of the site
- Development of on-site infrastructure to ensure that Les Courmettes becomes an exemplary ecotourism destination

In the first year, these activities will require an investment of €65,000, as outlined in the following budget.

Budget in EUROS (€)

Item	Year 1
Essential management actions for priority habitats	
Equipment	5,000
ARF staff costs	5,000
Subtotal	10,000
Scientific research & monitoring on climate change, biodiversity and carbon	
Travel and accommodation for international experts (1x year)	4,000
Equipment	1,000
Laboratory analysis	5,000
ARI & ARF staff time	5,000
Subtotal	15,000
Development of a site management plan	
ARF staff time and travel costs	10,000
Local partners' staff time	5,000
Consultancy fees	15,000
ARI support costs	5,000
Subtotal	35,000
Designation as a Regional Nature Reserve	
ARF staff time on application process	3,000
Consultation with other organisations and stakeholders	2,000
Subtotal	5,000
OVERALL TOTAL	€65,000

6. Biodiversity-Positive Outcomes

The development and implementation of a site management plan will result in a number of key positive outcomes for biodiversity, including:

- Diversity of habitats maintained by prevention of encroachment by vegetation in open areas
- Important rare and threatened species' populations monitored, protected and enhanced
- Greater public awareness and understanding of the site's important biodiversity value
- Increased knowledge and understanding of the species present on the site (with additional species recorded)
- Scientific research published which promotes understanding of the impacts of climate change on biodiversity
- Recognition of the site as Regional Nature Reserve with regulations in place to address some of the threats identified in section 4 above (such as hunting, overcrowding, illegal vehicles and non-motorised flying vehicles)
- On-site accommodation provided to house staff and volunteers to maintain an on-site presence

7. Area Photos



Photo 1: View of the Vegetation on Limestone Outcrops near the Pic de Courmettes



Photo 2: View of the Holm Oak (*Quercus Ilex*) Dominated Forest and the Pic des Courmettes



Photo 3: Bertoloni Columbine (*Aquilegia bertolonii*)



Photo 4: Aerial View of the Heritage Buildings

Annex 1: Selected Species of Interest recorded at Les Courmettes

a) Mammals

- Red deer (*Cervus elaphus*)
- Roe Deer (*Capreolus capreolus*)
- Wild Boar (*Sus scrofa*)
- Fox (*Vulpes vulpes*)
- European Badger (*Meles meles*)
- Red Squirrel (*Sciurus vulgaris*)
- European Hare (*Lepus europaeus*)
- Beech Martin (*Martes foina*)
- Weasel (*Mustela nivalis*)
- Stoat (*Mustela erminea*)
- Edible Dormouse (*Glis glis*)
- Garden Dormouse (*Eliomys quercinus*)
- Wolf (*Canis lupus*)
- Common Pipistrelle Bat (*Pipistrellus pipistrellus*)
- Lesser Horseshoe Bat (*Rhinolophus hipposideros*)
- Serotine Bat (*Eptesicus serotinus*)
- Savi's Pipistrelle Bat (*Hypsugo savii*)

b) Selected Birds

- Golden Eagle (*Aquila chrysaetos*)
- Peregrine Falcon (*Falco peregrines*)
- European Honey-buzzard (*Pernis apivorus*)
- Western Marsh Harrier (*Circus aeruginosus*)
- Short-toed Snake Eagle (*Circaetus gallicus*)
- Black Kite (*Milvus migrans*)
- Red Kite (*Milvus milvus*)
- Griffon Vulture (*Gyps fulvus*)
- Eurasian Eagle-Owl (*Bubo bubo*)
- European Scops Owl (*Otus scops*)
- Woodlark (*Lullula arborea*)
- Chough (*Pyrrhocorax Pyrrhocorax*)
- European Nightjar (*Caprimulgus Europaeus*)
- Spotted Flycatcher (*Muscicapa striata*)
- European Pied Flycatcher (*Ficedula Hypoleuca*)
- European Bee-eater (*Merops apiaster*)
- Crag Martin (*Ptyonoprogne rupestris*)
- Hoopoe (*Upupa epops*)
- Common Linnet (*Carduelis Cannabina*)
- Golden Oriole (*Oriolus oriolus*)
- Blue Rock Thrush (*Monticola Solitaries*)
- Common Rock Thrush (*Monticola saxatilis*)
- Ortolan Bunting (*Emberiza hortulana*)
- Red-legged Partridge (*Alectoris rufa*)
- Red-backed Shrike (*Lanius collurio*)
- Tawny Pipit (*Anthus campestris*)
- Dartford Warbler (*Sylvia undata*)
- Whinchat (*Saxicola rubetra*)
- Wheatear (*Oenanthe oenanthe*)

c) Amphibians

- Mediterranean Tree Frog (*Hyla meridionalis*)
- Agile Frog (*Rana dalmatina*)
- Common Toad (*Bufo bufo*)
- Common Parsley Frog (*Pelodytes punctatus*)
- Fire Salamander (*Salamandra salamandra*)

d) Reptiles

- Common Wall Lizard (*Podarcis muralis*)
- Western Green Lizard (*Lacerta bilineata*)
- Ocellated Lizard (*Timon Lepidus*) – classified as Near Threatened on the IUCN Red List
- Slow worm (*Anguis fragilis*)
- Western Three-Toed Skink (*Chalcides striatus*)
- Montpellier Snake (*Malpolon monspessulanus*)
- Green Whip Snake (*Hierophis viridiflavus*)
- Grass Snake (*Natrix natrix*)
- Ladder Snake (*Rhinechis scalaris*)
- Aesculapian Snake (now *Zamenis longissimus*)
- Viperine Snake (*Natrix Maura*)
- Southern Smooth Snake (*Coronella girondina*)

e) Selected Flowering Plants

- Bertoloni Columbine (*Aquilegia bertolonii*)
- Turban Lily (*Lilium pomponium*)
- Southern Adderstongue (*Ophioglossum vulgatum*)
- Bertoloni's Bee Orchid (*Ophrys bertolonii*)
- Loose-Flowered Orchid (*Anacamptis laxiflora*)
- Silver-edged Primrose (*Primula marginata*)
- Woodland Tulip (*Tulipa sylvestris*)
- Black false Hellebore (*Veratrum nigrum*)
- *Orchis olbiensis*
- *Gymnadenia odoratissima*
- *Leucanthemum burnatii*