

## **Society of Irish Foresters Study Tour to Bordeaux**

11<sup>th</sup> – 16<sup>th</sup> October 2015

On Sunday, 11<sup>th</sup> October, forty one members of the Society of Irish Foresters assembled at Dublin Airport to begin the 72<sup>nd</sup> study tour to Bordeaux and the Aquitaine region of south-west France. Surprisingly, despite the proximity, this was only the Society's second time to visit France. In 1991, we toured eastern France - see Irish Forestry, Vol. 49, 1992.

Our tour began with a visit to the Regional Forest Office in central Bordeaux, for an official welcome and a very informative, introductory lecture on forestry in the region. On the following days we visited the chestnut (*Castanea* spp.) forests of the Dordogne, protection forests near Arcacahon, INRA's impressive forest research campus, the commercial forests of maritime pine (*Pinus pinaster* Aiton) and a "climate change" arboretum.

The high point of this year's study tour was undoubtedly our visit to the forest research campus of the National Institute of Agronomic Research (INRA) at Pierroton, 45 km south west of Bordeaux. Here we were introduced to INRA's cutting edge forest genetics programme, which has three objectives: to produce enhanced forest reproductive material, to address the challenges presented by climate change and to select for improved pathogen resistance. INRA's network of research support structures is certainly impressive, particularly its forest advisory and co-operative groups which work together to develop the private forestry sector. At the heart of this industry is a clearly focused and well resourced forest research programme which drives the industry's innovation and development. Significant developments in forest genetics and advances in cultivation, establishment and silvicultural methods are the practical results of France's long-term investment in forest research. As a result, France's forestry sector is well placed to address the many challenges, and also the opportunities, which will arise over the coming years. There are many important lessons here for Ireland's forestry industry.

*Overnight – Bordeaux Pat O'Sullivan, Tour Convenor*

### **Monday, 12<sup>th</sup> October**

Bordeaux is a handsome city which can boast a proud 2,600-year history. Located in the southwest of France on the river Garonne, it has a population of 240,000. The architecture of the city centre is primarily three or four storey limestone buildings of classical design with shops or restaurants on the ground floor and offices and/or living accommodation on the upper floors. The majority of these buildings were constructed in the 18<sup>th</sup> and 19<sup>th</sup> centuries during a period when the mediaeval city was torn down



**Figure 1:** *Place de la Bourse in central Bordeaux.*

and virtually rebuilt to facilitate population growth and to improve sanitation by increasing airflow through the new, wider streets. Air pollution during the industrial age and the rise in popularity of motor cars resulted in the facades of all the buildings becoming blackened and unattractive. A major rejuvenation project during the 1990s focused on cleaning of the blackened facades of these fine buildings.

In addition, strictly enforced traffic controls were introduced. An extensive electric tramway, which is very similar to Dublin's LUAS, facilitates movement through the city. In the city centre area, the overhead power lines are dispensed with and an ingenious ground level power supply provides the electricity for the trams thus making the transport system very unobtrusive. In 2005, Bordeaux Centre was awarded a coveted UNESCO World Heritage status.

In the afternoon of Day 1 of our tour, fortified by a superb lunch at Le Bistrot des Quinconces, we visited the Regional Forestry headquarters in central Bordeaux, for an introductory lecture on forestry in the Aquitaine region which focused on its history, silviculture and forest fire risk assessment and management. La Maison de la Forêt is home to the Union of the Southwest Foresters whose 6,340 members own 65% of the private forests in the region. The Union represents the interests of forest owners on a wide range of issues including laws and regulations, investment, forest protection and it lobbies on their behalf at local, national and international level.

In France there is 14.8 million ha of forest, representing 27% land cover. Forests are predominantly privately owned - 74% of forests are owned by individuals or groups, the remainder is state owned. France boasts the highest standing volume of timber in Europe and ranks 3<sup>rd</sup> in percentage forest cover after Sweden and Finland. The timber

industry has an annual turnover of €40 billion and employs 230,000 people.

The Aquitaine region of France has 1.78 million ha of forest, equivalent to 42% land cover. In this region 92% of the forests are privately owned, which is far higher than the national average. The forestry industry in Aquitaine has a turnover of €2.59 billion and employs about 34,000 people. Annual timber production is 6 million m<sup>3</sup> of conifers and 360,000 m<sup>3</sup> of broadleaves.

There are three distinct environment types in the Aquitaine region: Dordogne/Garonne which is characterised by broadleaf species such as oak (*Quercus* spp.), sweet chestnut (*Castanea sativa* Mill.) and poplar (*Populus* spp.); Adour Pyrenees which is mountainous and is predominantly beech (*Fagus sylvatica* L.) and oak; and Landes de Gascogne which is noted for its maritime pine.

The Landes de Gascogne has undergone a significant change in land use over the course of the previous two centuries. In the early 18<sup>th</sup> century the area was heathland which was used for sheep farming while currently it has more than 90% forest cover. At 1.1 million ha it is the largest plantation forest in Europe – a monoculture of maritime pine, originally planted for coastal erosion control and sand dune stabilisation, later it supported a major resin production industry and in more recent times the focus has shifted to commercial sawlog production while, in coastal areas, a significant tourism industry has developed. The maritime pine tree improvement programme began in the mid-1950s and has led to a large increase in sawlog production.

Currently, one of the main objectives of the Union of Southwest Foresters is to help its members reduce the damage caused by forest fires. The cornerstone of this service is a comprehensive GIS-based risk assessment and mitigation procedure, provision of fire insurance, the development of fire management plans and provision of fire patrols and additional monitoring during periods of greatest fire risk. The Union also assists members with funding through a low interest rate loans and a 10-year forest savings plan. It also draws up forest management plans and negotiates timber sales on behalf of its members.

*Overnight – Bordeaux Chris Mc Gurren*

## **Tuesday, 13<sup>th</sup> October**

We departed Bordeaux at 8.30 am and headed for the Dordogne which is approximately 100 km east of Bordeaux on the A89 Auto Route. Our leader for the day was Christophe Orazio, Director EFI-Atlantic. The main tree species in the Dordogne are sessile oak (*Quercus petraea* (Matt.) Liebl.), maritime pine and chestnut. Just over 50% of the land area of the Dordogne is forested and 64% of this is composed of broadleaves. Traditionally these stands were coppiced, mainly for firewood. However, the coppice has grown old and has begun to degenerate. After centuries of continuous coppicing it has become susceptible to disease, and current

policy is to replace this low value coppice, especially chestnut coppice, with higher value maritime pine.

At our first stop we were joined by Gerome Carnet who is employed by Centre National de la Propriété Forestière (CNPF) as a forest advisor to private forest owners. This service is funded by a national land tax. More than 90% of the forests in the Dordogne are privately owned and the average size is just 4.0 ha. The main problems in this area arise from the very diverse objectives of the forest owners. Significant effort is invested in trying to organise them into groups. Joint management of the forests is carried out on behalf of these groups by Gerome Carnet and his colleagues, although no formal agreement is made between the owners. There are very few large, well-managed forest properties in the Dordogne.

Our first stop was at an area of poor quality chestnut coppice. The coppice was cleared by a feller-buncher with a rotating disc harvester head. This machine has greatly aided the transition from coppice to pine as it is fast and can cut lower down on the stem than chainsaws, which facilitates ground preparation for the subsequent restocking. The chestnut was stacked on the roadside for the firewood market. Income from the firewood sale is shared among the forest owners on the basis of the area each one owns. Paper mills also buy this chestnut material, but the logs are less attractive for milling because of the high proportion of dead and decaying logs in each consignment. There were also some very fine oak stems stacked on the roadside. These are individually stamped and the income for each stem goes to the individual landowner. Good quality oak is highly prized by furniture makers and the wine industry where the first 2 m of the stem can command prices between €400 and €600 m<sup>-3</sup>.



**Figure 2:** High quality oak logs which will be used to make “premier cru” wine barrels.

Harvesting takes place within a policy and legal framework which is agreed at national level. In the Dordogne, a licence is required for felling an area >1.0 ha. The licence carries a restocking requirement. In the past, chemicals such as Garlon® could be used to control vegetation but it is prohibited now. At our next stop, two methods of ground preparation (complete ploughing and mulching plus harrowing) were being assessed. The aim is to eliminate competing vegetation for the first year and thus give the trees a chance to get established. The trees are planted in strips 4.0 m apart with closer spacing along the lines in order to increase stocking levels. After a few years it is possible to scarify between these strips. Mulching costs €1,000 - €1,500 ha<sup>-1</sup>. Maritime pine was replanted on the site. The rotation length is 35 to 40 years and thinning is scheduled for years 15, 20 and 30. The expected yield class is 8 to 10 m<sup>3</sup> ha<sup>-1</sup> yr<sup>-1</sup>. Natural regeneration would cost approximately €2,500 ha<sup>-1</sup> on this site. Restocking with oak is a possibility but it was felt that there would be too much competition from re-growth of chestnut coppice to make this a worthwhile option. It is always a major challenge is to get the forest owners to reinvest as they expect the income from clearing the old coppice should pay for the establishment of the new crop. The replanting requirement is now much more rigidly enforced due to pressure on France's national timber resource.

We then visited a reforestation site where sessile oak was planted with a mix of *Acer* and *Prunus* species in an attempt to increase species diversity. However, the *Prunus* seedlings had failed because the soil here was unsuitable. Close by, a small plantation of loblolly pine (*Pinus taeda* L.) was being assessed as an alternative to maritime pine. Initial indications are that it is quite windfirm and can grow faster than



**Figure 3:** A 10-year-old stand of intensively managed, short rotation poplar.

maritime pine, but it will thrive only on good quality sites and is more prone to basal sweep than maritime pine. Loblolly pine is also quite susceptible to attack by the spruce bark beetle<sup>1</sup>.

Our final stop of the day was at a very impressive stand of poplar. In the Dordogne there is a strong market for poplar timber, which is used to produce boxes and baskets for the fruit and vegetable industry in the south of France. It is also an important element of the plywood industry, although this has declined in recent years.

Poplar provides an important source of income for the forest owner. Cultivation is very intensive but the returns are attractive due to the short rotation length of just 12 years. The main challenge is to grow the crop as fast as possible and to prune it early on. The standing volume after 12 years is approximately 200 m<sup>3</sup> ha<sup>-1</sup> and the average price is €50 m<sup>-3</sup>. The net income per tree is approximately €30. Harvesting will be done by chainsaw as this causes less damage to the valuable logs. All branch wood is shredded and removed from the site to reduce the spread of disease. The trees cost €5 each and they are planted at 7 × 7 m spacing (approx. 200 plants ha<sup>-1</sup>).

In France there are currently about 30 poplar clones in use, mostly North American and European varieties. There is a constant need to develop new clones due to sanitary problems with poplar-rust, aphids etc. The objective of breeding programmes is to develop greater resistance to disease. If disease enters a plantation, treatment is very expensive. The best defence is to diversify by planting as many clones as possible in each locality to reduce susceptibility to disease.

*Overnight – Bordeaux Pacelli Breathnach*

### **Wednesday, 14<sup>th</sup> October**

On Wednesday, we travelled south west to Pierroton to visit INRA's huge Forest Research Campus. INRA is France's national institute for agricultural research. Established shortly after World War II in May 1946, its original objective was stated very simply as being – *to feed France*. It has since diversified greatly. The Pierroton research centre is one of the two main forest research stations in France and is now 50 years in existence. Here its scientists conduct innovative and targeted plant science, ecological and environmental research in response to current challenges in the agricultural, forestry and aquaculture sectors. The forest research centre alone has a staff of about 220 people who work with partners such as the European Forest Institute (EFI); the French Institute of Technology for Forest-based and Furniture Sectors (FCBA), which is a national organisation for applied research working on nursery production and forest products; and Alliance, which is a cooperative of private forest owners engaged in forest management, establishment and harvesting.

Christophe Orazio, Director of EFI-Atlantic gave us a presentation about his

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<sup>1</sup>Trees in the genera *Picea*, *Abies*, *Pinus* and *Larix* are the bark beetles' trees of choice.

organisation. EFI-Atlantic was established in 2009 in response to increased forest industry globalisation, climate change, trans-national pollution concerns, and greater European integration. EFI-Atlantic focuses on the sustainable management and competitive utilisation of forests in diverse geographical regions stretching along Europe's Atlantic rim from southern Portugal up to northern Scotland. It is currently involved in four strategic areas: integrated management of forest risks; facilitation of adaption to climate change; sustainable intensification of wood production and provision of ecosystem services. EFI-Atlantic has a membership of 130 research organisations from 36 countries, mainly in Europe.

Loic Cotton of Alliance Forêts Bois then followed with a presentation on his organisation. Alliance is a large cooperative of 44,000 forest owners spread across five regions of France, and employs about 500 staff. In 2014 it had €30 million in assets and a turnover of €170 million. It sold 2.8 million m<sup>3</sup> of timber and reforested 15,400 ha. It provides the full range of forest management services to its members. While it currently exports wood and wood products to 10 countries, just over 90% of its produce is sold in France.

Our first stop was at the site of a large climate change research experiment in which there are 38 different species of conifers and broadleaves planted in replicated plots, with three provenances of each species. This trial is replicated in 38 other areas from Portugal to Scotland and the Azores. Unfortunately, Ireland is not represented in this important trial as no Irish research organisation was able to participate. During the period 2009 – 2013 the unique series of trials established by this project, whose sites range in location from 37 to 58° latitude, to monitor productivity changes and test the adaptive capacity of the species to climate change. All the seed used in the trial was sown in a single nursery in France and plants were subsequently delivered to the various sites. An international database has been developed which is coordinated by EFI-Atlantic. Plant health assessments (insect damage, frost damage and drought) are undertaken each year. Meteorological conditions are also recorded on the database. It is likely to be 15 years before any meaningful trends emerge from this experiment.

We also visited an experiment which was laid down in 2009 to assess the growth of single species and various species mixtures under a range of management treatments. The species being tested included *Pinus pinaster* and *Pinus taeda*, a range of Eucalyptus species in mixture with *Pinus pinaster* and the hybrid *Eucalyptus gundal* (*Eucalyptus gunnii* Hook.f. × *Eucalyptus dalrympleana* Maiden) for biomass production. Increasing plant nutrition, through the use of legume species, is also being assessed here.

We then returned to the main campus at Pierroton where we toured the impressive FCBA Technical Research Centre which studies genetic improvement, particularly of maritime pine and loblolly pine. The overall objective of current research is to



increase the productivity of planted forests. Some very impressive results have already been achieved. FCBA scientists have successfully developed the *Eucalyptus gundal* hybrid, which is frost tolerant to  $-15^{\circ}\text{C}$ . They have undertaken some testing in relation to genetic modification of *Pinus pinaster*, but under current legislation this material cannot be tested in the field. They also have a laboratory where several thousand genotypes of a range of tree species are stored in liquid nitrogen for conservation purposes.

In the afternoon we travelled further west to Arcachon to see protection forests of maritime pine which were established along the Atlantic coastline during the mid-19<sup>th</sup> century. We were met by Francis Maugard, the forest manager and assistant Fabrice Caire of the Office National des Forêt (ONF). They explained that all forest operations are prohibited in a 200 m wide strip immediately behind the sand dunes. Further inland limited minor forest operations are permitted and beyond that normal forest management operations are allowed. The forest is managed as an even-aged plantation on a rotation length of 50-60 years during which four and sometimes five thinning operations are carried out, resulting in a final crop of 250 stems  $\text{ha}^{-1}$ . Natural regeneration post clearfell is generally reliable but it may be supplemented by seeding where required. The target restocking level is 1,250 stems  $\text{ha}^{-1}$  and it may sometimes be necessary to respace the naturally regenerated seedlings. Maritime pine was originally planted along this coastal strip of 230 km in the mid-1800s in an attempt to protect the land from coastal erosion and this has resulted in a single forest block of 60,000 ha. An interesting feature of the forest understory is the prevalence of *Arbutus unedo* (L.), the strawberry tree.



**Figure 4:** Tree-breeding laboratory at INRA's forest research campus near Pierroton, south west of Bordeaux.





**Figure 5:** Europe's tallest sand dune (Grande Dune du Pilat) overlooks 1.1 million ha of maritime pine which stretches to the horizon.

ONF forests are required to be multi-functional. The management objectives here at Arcachon are erosion control, provision of recreation by maintaining walking and cycle tracks, maintenance of biodiversity, and wood production. Public access is restricted to certain areas within the forests and routine patrols are carried out to control anti-social behaviour. Interestingly, the forester rangers in this area carry guns, but do not have the power of arrest. Forest fires are a significant risk for much of the year. The most common cause of forest fires is lightning strike. Remotely monitored fire towers are built at 10 km intervals to detect outbreaks.

We concluded our afternoon by visiting and climbing the sand-dune at Pyla (Grande Dune du Pilat). With a current height of 110 m this is the tallest sand-dune in Europe and offers fine panoramic views looking out on the Atlantic Ocean and inland over endless forests of maritime pine or as the local forester put it – “to the west the blue ocean, to the east the green ocean”.

*Overnight – Bordeaux Eugene Griffin*

#### **Thursday, 15<sup>th</sup> October**

On the fifth day of the study tour we headed east from Bordeaux with Mme Amelie Castro (CRPF), to begin a day which highlighted the critical importance of long term research, innovation and collaboration. The role of CRPF (Le Centre Regional de la Propriété Forestière) is to direct, assist and improve the management of private forests in France.

At the first stop, a wind-blow restock planting site we met Loic Cotton, Director of Alliance Forêts Bois, the forest owners co-operative. The restock site had a very

sandy soil (98% sand). The water table was described as being too high in winter and too low in summer. It costs an average of €1,000 ha<sup>-1</sup> to restock this type of site.

Reforestation of these sandy site types involves the following operations:

- **clear brash** – the contractor uses a locally designed machine, which is essentially a roller with large blades attached, which are designed to chop up the branches. The roller is tractor drawn but ground compaction is not a problem as the soils are sandy.
- **plough** down to a depth of 40cm and apply mineral phosphate fertiliser at 90 kg ha<sup>-1</sup>.
- **compacting** – this is done to create a better planting medium by breaking up larger soil lumps and expelling excess soil air. It also helps to control vegetation.
- **planting** with improved maritime pine containerised plants at 4 by 2 m spacing. Improved plants cost €0.25 each plus a further €0.25 each for planting. On average workers plant 1,500-2,000 plants a day depending on the site. These containerised plants have a 6-8 month supply of phosphorus in the container.

In the third year mechanical inter-row cleaning is carried out to reduce vegetation growth and in the process remove a potential fire hazard. The rotation length is 35-45 years and first thinning is carried out at 12 years of age. At clearfell the mean DBH is 35 cm and the average tree size is 0.8-1.2 m<sup>3</sup>. The standing volume is 350 m<sup>3</sup> m<sup>-1</sup> and average revenue is €10,000 ha<sup>-1</sup>.

Landes de Gascony has very poor quality agricultural land with the result that the average distance between villages is almost 15 km, which is a very low density for France. These sandy soils in the Mimizan area were first planted in the mid-19<sup>th</sup> century. Previously sheep farming was the main industry, but forestry is now the principal employer in the area. In the 1960s, resin production was the main source of revenue, but now it is wood production.

Environmental groups are strongly opposed to monocultural planting of large tracts with Maritime pine followed by clearfelling. However, a biodiversity inventory carried out 10 years ago found that birds, which are normally associated with open land, were now using clearfell coupes, moving from one to the next and their populations were increasing. Alternative land uses such as maize or solar farms provide much less biodiversity. Returning the land to sheep grazing is not an option as these soils are too low in nutrients to support modern sheep breeds. Overall, it appears that forestry is the best land use option for biodiversity.

Our second stop was in Mimizan, a town with a population 13,000 people. Thanks to the extensive forests (83% forest cover) and its proximity to the Atlantic Ocean, the area is now an important tourist destination. However, forest fires are a serious risk.

In 2015 there were 1,700 separate incidents. The fire risk season extends from March to August and young forests (less than 20 years old) are the most vulnerable. Natural causes, such as lightning storms cause 19% of the fires, but 81% of all fires in the area are the result of human activity - a very low percentage of these are caused by arson attack. In the local community hall we met Jean Marc Billac, Benoît Bodennec and Sophie Gaston from the Association Régionale de Défense des Forêts Contre l'Incendie (DFCI-Aquitaine) who explained the work of their organisation and kindly provided refreshments and tourist information on the area.

DFCI-Aquitaine is a unique, community based organisation, which was formed in August 1949 following the years of “Les Grands Feus” – a period from 1940-1949 when 450,000 ha of commercial forests were destroyed by fires and resulted in the death of 82 villagers/fire-fighters in huge conflagrations to the south of Bordeaux. DFCI's main objective is to prevent forest fire by improving forest management practices. DFCI coordinates the work programmes proposed by DFCI Associations by way of Departmental Unions.

DFCI supports the efforts of forest fire-fighters by:

- building access tracks and bridges to give fire-fighters faster access within the forest;
- providing at least one reservoir or “water point” per 500 ha of forest;
- initiating information campaigns to alert all forest users and visitors to the dangers posed by forest fires;
- building and maintaining fire breaks in the forest and especially alongside roads;
- assisting forest owners to monitor fires sites after they have been extinguished.

Our third stop of the day was a second generation maritime pine seed orchard close to Mimizan where our guide, Annie Raffin (INRA), gave us an excellent presentation on tree improvement research at the Office National de Forêt (ONF) seed orchards in the Aquitaine. Maritime pine is indigenous to the area and in the early 1950s work began with the creation of a “common garden” or small arboretum to compare maritime pine trees from throughout its natural range. This was the earliest, scientific trial which compared maritime pine populations using replicated plots, thus enabling statistical analysis to be undertaken. The first step in the maritime pine improvement programme, which began in the 1960s, was to compare the growth and performance of the provenances in this trial. There were huge variations between the provenances, but the local Landes provenance, provided greater timber production and greater frost resistance than the other provenances. The next step was the selection of 350 plus-trees, based on the superiority in growth rate and form, in forests throughout the Landes forest. Following this a recurrent selection and then a backward selection

of the best parents was used to establish a seed orchard. A new seed orchard was established from each generation of the breeding programme, 200 ha for each generation. The seed orchard we visited was a 83-ha second-generation seed orchard which was planted at wide spacing to encourage greater cone production. There can be up to 30% contamination by pollen from surrounding non-orchard trees, reducing genetic gains by up to 50%.

Since the 1960s the important selection criteria for ONF's tree breeding programme were growth rate and stem straightness; more recently wood quality has been favoured. The timber industry is satisfied with the wood quality gains achieved and it is now looking for increased volume growth. The challenge is to deliver these increased growth rates without compromising wood density levels. Improved plant material is used exclusively on reforestation sites. ONF's breeding programme is publically funded so improved seed is available to all nurseries owners and there are no royalty payments built into the cost of the seedlings. This is done in the national interest.

It is important to maintain the broad genetic diversity of maritime pine as this ensures greater adaptability in the face of an ever changing environment where climate change and new pests and diseases are real and imminent threats. An EU project has been set up to conserve the national forest resource of maritime pine by planting five "conservation units" or gene banks along the coast. Each plot is 25 ha and the trees are allowed to pollinate naturally.

An interesting development, which underlines the value of long-term research, is a refinement of the tree breeding programme which selects for disease resistance.



**Figure 6:** Amilie Castro (CRPF) and Annie Raffin (INRA) outline current tree improvement research at the *Pinus pinaster* seed orchard near Mimizan in the Landes.

Different selected families of maritime pine are planted in *Fomes annosus*-infected plots to see if any population exhibits stronger resistance. INRA scientists are also selecting for improved drought resistance in maritime pine.

The final stop of the day was at a clearfell site where tree stumps had been removed for sale as boiler fuel. In the first plot we visited, the stumps had been removed recently; in the second plot, the stumps had been removed almost nine months previously and were cleaner owing to the effects of washing by frequent rainfall. The preferred method is to chip the stumps on site but where it is not possible to set up the chipper, full stumps are transported to the customer. The revenue from stumps is €2 tonne<sup>-1</sup> and 35 tonnes ha<sup>-1</sup> are removed. The cost of stump removal is primarily dependent on the stump diameter. Stump removal also reduces the cost of site preparation for the succeeding crop.

There was some heated discussion about the impact of stump removal on soil fertility. A comparison of growth rates on sites where stumps were either removed or retained has shown no significant difference to date on the growth rates of the next-rotation crop. However, there is a loss of soil carbon due to site preparation and it takes seven years for this to be restored. The spreading of ash from wood boilers on reforestation sites is not allowed at present as the ash is classified as a waste material. In this locality there is a tradition of stump harvesting, as it has been practised since the 19<sup>th</sup> century to manufacture tar for local fishing boats.

*Overnight – Bordeaux Clodagh Duffy*



**Figure 7:** “Rue Sullivan” in central Bordeaux – a reminder of the many historic links between Ireland and Bordeaux.

**Tour Participants (41)**

Frank Barrett, Pacelli Breathnach, Richard Clear, Philip Comer, John Connelly, Bob Dagg, Padraig Dolan, Clodagh Duffy, Niall Farrelly, P.J. Fitzpatrick, Jerry Fleming, Gerhardt Gallagher, Tony Gallinagh, Sean Galvin, Eugene Griffin, John Guinan, George Hipwell, Mark Hogan, Catherine Hutchinson, Kevin Hutchinson, Tim Hynes, John K Kelly, Kevin Kenny, John Madden, Chris Mc Gurren, Tom McDonald, Willie McKenna, Liam Murphy, Frank Nugent, Benny O'Brien, Michael O'Brien, Kieran O'Connell, Colm O'Dwyer, Paddy O'Kelly, Owen O'Neill, Pat O'Sullivan, Richard Romer, Mary Treacy, Padraic Treacy, Gabriel Tucker, Trevor Wilson.