

# *End of Tradition?*

## *Part 1*

### *History of Commons and Commons Management (Cultural Severance and Commons Past)*



*Edited by Ian D. Rotherham, Mauro Agnoletti and Christine Handley*

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*Edited by Ian D. Rotherham, Mauro Agnoletti and Christine Handley*

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# *Guided pollards in the Basque Country (Spain) during the Early Modern Ages*

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## **Introduction**

Incompatibility between the rate of forest exploitation and the voracity of production activities, on the one hand, and the biological rhythms and growth rate of leafy species on the other was one of the major problems facing humanity in the field of forest husbandry throughout the Modern Ages. The rate at which demand for raw materials by the handcraft and industrial sectors grew was clearly faster than the growth rate of the various tree species themselves, causing deforestation and scarcity of raw materials to become increasingly serious problems.

In Gipuzkoa up until the nineteenth century, 80% was common land and just 20% was private property. However, during the Middle Ages there was almost free use of the land. From the sixteenth to the eighteenth centuries it was gradually restricted to protect the interests of industry, although ordinary people had rights to graze livestock and cut the trees for domestic use, with some limits.

In their effort to ensure the sustainability of woodlands, forests and their related activities, from the fifteenth to the eighteenth century, the inhabitants of Gipuzkoa introduced a number of different forestry techniques in an attempt to achieve the highest possible level of productivity with the limited forest resources available in their small (1,997 square kilometres) mountainous region. These techniques gradually evolved over time, in accordance with the needs and priorities of economic activities and the abundance or scarcity of forest materials and resources.

## ***Ipinabarres* or guided pollard oaks**

The demographic and economic expansion which occurred in Gipuzkoa during the Late Middle Ages reached its climax during the

second half of the fifteenth and the first half of the sixteenth centuries, putting enormous pressure on the area's rich forest resources. In light of this situation, a sustainable system was required which would be capable of responding to the needs of different activities. This, then, is the main reason for the appearance of the *ipinabarros*, *ipenabarres* or guided or shaped pollard oaks, created using the *horca y pendón* method, in which one tree was left standing every 4.5 metres, and of its main branches, all but two or three were cut off. Those that were left were pruned to a height of 3 metres, one at a right angle to the main trunk (the *horca* or fork), and the other at an obtuse angle (the *pendón* or standard).



**Figure 1. Guided pollard in Makutso (Oiartzun)**

## **The beginnings of the technique**

The first references to *Ipenabarres* (a Basque word that means to put or leave a branch) in the Gipuzkoa region are linked to the Deba and Urola river basins and date from the 1530s. Nevertheless, the technique had been in use in the Castilian region since at least the end of the 15th century, mainly in connection

with the development of pasturelands. By means of an ordinance dated 28 October 1496, the Catholic Monarchs ordered that trees should no longer be cut down from the base of the trunk, but rather should be left with two (or sometimes three) main branches (the aforementioned *horca y pendón*) from which new shoots would be able to sprout. However, it seems that this practice did not become common in Gipuzkoa until 1548. In the *Juntas Generales* (or General Assembly) held in Zumaia between 14 and 24 April 1548, in light of the increasing deforestation and the general concern over the scarcity of timber in the region for building ships and wood for making charcoal, in addition to ordering the planting of 500 oaks and chestnut trees every year on the commons, the *Juntas* decreed that no tree should be felled, with the exception of those destined for the shipyards and the construction of buildings, and that those used for firewood and charcoal should be turned into guided pollards. The concern over forestry resources was not exclusive to the Gipuzkoan authorities, and voices rang out all over the Iberian Peninsula and Europe also, warning of the problems of deforestation.

By the middle of the sixteenth century, the scarcity of materials, mainly for the construction and shipbuilding industries, forced Gipuzkoa to issue the aforementioned order in 1548 and to petition Carlos I for the confirmation of another order issued by the Elgoibar *Juntas Generales* on 10 May 1552, regarding the management of coppices. The order recommended that guided pollard oaks be left standing in the coppices at 22 metre intervals. Curiously enough, towns like Elgoibar, Hernani, Errenteria and Oiartzun, in which coppices were common and the principal industrial activity was ironworking, rejected the order and voted against it. Consequently, the confirmation was issued but in a modified form, with the principal change being the distance between the pollard trees left standing, established as 33.5 metres instead of 22 metres.

## The spread of the technique throughout Gipuzkoa

In other areas, outside the aforementioned Deba and Urola river valleys, guided pollards, or *ipinabarros*, were unknown, or at least the technique was not applied until the end of the seventeenth century. Most of Gipuzkoa's woodland areas were covered with coppices and maiden trees, at least until the seventeenth century. This seems to have been the predominant situation throughout the Late Middle Ages, as indicated also by the municipal bylaws. According to the *Juntas Generales*, in 1564 coppices occupied at least a third of Gipuzkoa's woodland area, and continued to predominate in towns with a strong ironworking tradition, such as Legazpi (1591), Oiartzun (1611-1691) and Hernani (1662).

Indeed, the survey carried out by royal decree in 1569 by Doctor Hernando Suárez de Toledo, which aimed to determine the degree of compliance with the 1563 Royal Order commanding the planting of oaks for the Royal Armada in all areas within two leagues from the sea (an order which Gipuzkoa failed to fulfil), found that two forest models coexisted in the region. One was that of coppices, mainly used for charcoal production, although with the disadvantage that when they were cut or pruned, livestock could no longer be allowed to graze in the area because they would eat the spring. The other model was that of maiden trees, which did not have the disadvantage of the coppices; livestock could be left to graze beneath the trees without fear that they would harm the new growth. These trees were used mainly for shipbuilding and the production of charcoal.

According to the aforementioned survey, the predominance of coppices during that period was more common in towns such as Elgoibar, Legazpi, Errenteria, Oiartzun, Hondarribia and Hernani, which had strong ties to the iron and steel industry. In other towns, such as Zarautz, for example, maiden trees were more common, while in Zumaia, pollards existed alongside the coppices. Deba, on the other hand, had a few trees from which knees (known locally as *corbatones*) could be obtained, while in Getaria, the majority of the

woodland areas were dedicated to the production of these parts. We can see, then, that in those towns with a strong iron and steel industry, coppices were most common, whereas in the coastal villages, which were more concerned with shipbuilding, it was not unusual to find a combination of coppices, maiden trees and pollards used for producing parts for the shipyards. The majority of people surveyed agreed upon the general lack not of straight wood, but rather of curved wood. Suárez de Toledo himself affirmed that in Gipuzkoa coppices and *straight* woodland areas (used for plank production) were most common, while in Biscaya, *twisted* wood (used for shipbuilding) was more abundant. In Biscaya, it was not customary to cut maiden trees destined for charcoal production from the base of the trunk, but rather from the base of the branches in order to pollard them.

All the towns along the coast and in the immediate environment (Hondarribia, Donostia, Zarautz, Getaria, Zumaia, Zestoa, Azpeitia, Elgoibar and Mutriku) coincided in highlighting the lack of trees available for shipbuilding, and the need to import them from Biscaya, where they were more abundant. Errenteria, for example, had been doing this for quite a while. One of the keys to the question was that the aforementioned 1552 ordinance regarding coppices, which specified that a guided pollard be left every 33.5 metres, had not been respected along the coast, and was difficult to enforce. The councils complained bitterly that they were forced to go further and further afield for their timber, and pay ever increasing prices. The supply problems experienced by Gipuzkoa's shipbuilding industry lasted right up until the second decade of the seventeenth century. Proof of this is the fact that the *Juntas Generales* of Gipuzkoa were obliged to petition Biscaya for the sale of knees for the manufacture of ships in 1611, 1616 and 1617.

While by the mid seventeenth century towns such as Azpeitia and Azkoitia were obliged to pollard their oaks in the *horca y pendón* style, in the *Montes Francos* of the Urumea, which belonged to Hernani, Donostia and Urnieta, it was not until 1658-1671 that the hitherto predominant coppices were

replaced by pollards. This change, however, was not without its difficulties and in 1658, a legal dispute ensued regarding the new cutting system, which ended in its generalised enforcement. The practice was definitively established in the aforementioned woodland areas in 1671, after the *Concordia* held in Astigarraga on 21 March that same year between Donostia, Hernani and Urnieta decreed that every cut must leave kept and guide branches. From then on, in the firewood auctions of the *Montes Francos* of the Urumea, foresters were expressly ordered to respect the rulings of the 1671 *Concordia*, and were prohibited from felling those oaks marked for guided pollarding, known as *ypinabarros*. Something very similar was occurring meanwhile in the nearby towns of Oiartzun and Errenteria, where an order was issued to leave oaks suitable for pollarding at intervals of 6.5 metres in the coppices.

Unlike what had occurred previously, during the eighteenth century, the number of coppices decreased notably, although they continued to be used (mainly) for the basket-weaving and barrel-making industries. The reason for this decrease was that most of the woodland areas and forests in Gipuzkoa were now occupied by pollards and maiden trees. It is more than likely that the needs of the *Real* Company of Caracas, from 1728 onwards, and the Royal Armada, following the Royal Order of 1748 (with its specific chapter for Gipuzkoa in 1749), both major customers of the Gipuzkoan shipyards, played a key role in this change. In light of all the available data, we can affirm that by the middle of the 18th century, pollard forests had overtaken coppices, and even maiden woods.

## **Sustainable and complementary use**

Therefore, the need to establish a sustainable forest management system and to comply with the demand for very different products by the two principal industrial activities prevalent in the region from the sixteenth to the eighteenth century, namely the iron and steel industry and the shipbuilding industry, forced a number of changes in the forest husbandry methods used, and fostered the creation of pollards. As

the lawyer Arnedo explained in 1662, pollarding fulfilled a number of different functions, including that of responding to the combined demands of the iron and steel industry, the shipbuilding industry and livestock farming: it produced pastureland, although less than coppices, and enabled grass to grow so that livestock could graze, while at the same time preventing them from eating the spring, since the pruning was carried out at a greater height; it left two or three main guide branches, which with time could be used for obtaining the curved parts (*tuertas* or *curvatones*) so essential for shipbuilding; from these main branches a series of smaller ones grew, which could be used for making planks, although they were mainly used for producing charcoal, with the added advantage of increased productivity, since pruning could be carried out four years earlier (while coppices could be cut once every twelve or fifteen years, oak pollards could be cut every eight or ten years, and beech pollards every five to six); moreover, the distance between the trees enabled them to expand, thus growing longer branches. In this sense, Javier Ignacio de Echeverría, author of *Discurso sobre la plantación del roble*, written in 1775 for the *Real Sociedad Bascongada de Amigos del País*, calculated that a guided pollard oak could grow to occupy 60 square metres, while a maiden one could only occupy 15 square metres. The problem with the coppice was that when the stools were pruned, they could not be protected, since this would have required the building of fences or hedges, and this was not possible because the majority of them were located on common woodland, where everyone had both right of way and the right to graze their animals.

With regard to the second technique, in his *Ciencia de Montazgos*, written in 1783, José Odriozola affirmed that coppices for firewood could be achieved in many different ways, but that the best way was to sow oak acorns and beeches mixed with chestnuts. In the nurseries it was important to maintain a certain distance between those plants destined for coppices, in order to enable pollarding or the formation of the stools which would later serve as the base, and to permit the branches to spread correctly. The aforementioned Odriozola recommended

a distance of 1 metre between stools. According to Villarreal de Bériz, the best coppices were chestnut ones, because they grew more quickly and provided good wood for making charcoal, although for fires the wood was not as good as oak. Five years was sufficient for obtaining hoops suitable for barrel-making and seven or eight years sufficient for charcoal. Following an initial cut half a metre from the ground, when fully grown, it was best to cut them almost right back down to ground level, since in that way they would shoot up anew.

The third cutting technique was that of maiden trees, in which trees were left to grow for between eighty and one hundred years, and were used for building houses and smithies, as well as for the shipbuilding industry. However, even maiden trees required a certain amount of care and handling, since as the Marquis of Rocaverde, Superintendent of Ships and Plantations, stated in 1743, they had to be cleaned (i.e. the lower branches had to be pruned) and should ideally be guided to make them straight. José Odriozola recommended following the traditional method of planting oaks thickly in these areas, thus making the most of the available land and enabling the trees to protect each other from the wind: 2 metres for repopulated woodland, and 1.5 metres for virgin areas or areas which had been sterile for some time.

## The process of obtaining guided trees

During the eighteenth century, when the coppices began to lose ground to pollards and forestry began to develop as a science, the most respected and acclaimed voices were firmly in favour of obtaining maidens and pollards for shipbuilding not from coppices, but rather from nursery plantations.

The first step was to sow acorns or seeds on good quality soil, either during the month of November in the case of oaks, holm oaks, beeches and chestnuts, or during the winter season (up to March) in the case of walnut trees. The second step was carried out two or three years after planting, when the saplings, known as *chirpias*, were ready to be



transplanted. The transplanting took place between November and March, always when the moon was waxing in order to take advantage of the strength of the sap. The saplings were replanted in a previously prepared area, which had been dug and fertilised during the months of May, June or July. In the nursery, which was fenced in order to prevent livestock from entering, the saplings were planted in straight lines at a distance of 70 cm, in order to leave room for hoeing and to ensure that the trees did not interfere with each other's growing process. The area around the saplings was hoed or weeded three or four times a year, in March, June, September and December. Two or three years after having been transplanted to the nursery, the oak saplings were cut back between February and March to 7-9 cm from the ground. This operation was not necessary in the case of beeches and walnuts. In June of that same year, the poorest saplings were eliminated and only the straightest were conserved. Every year, between November and the end of January, all unnecessary branches were pruned.

Before commencing with the third step, the tip of the young tree was cut. However, instead of a straight cut, the cut was made in the division between branches, in the shoots or where the new shoots were going to sprout, in order to prevent the tree from drying out or livestock eating the spring. The third step took place six or seven years after the sapling had been transplanted to the nursery, or in other words, when the tree was eight or ten years old. It was at this moment that the trees were transferred to their definitive location in the woodland areas. By this time, the tree should have reached a height of approximately 2.5 metres, and a thickness or circumference of 12 cm. The trees were removed selectively between November and mid March. During the first year, the strongest trees were transplanted, and one year intervals were left between each removal operation, to enable those left in the nursery to recover and benefit from the shade provided by the others. The trees were replanted at intervals of 3-3.5 metres, in the case of maidens, and 5.5-7.5 metres in the case of pollards, depending on the flatness of the terrain (closer together on

the slopes and more spaced out on the flats). The transplanted trees were bound around with thorn bushes, generally hawthorn, and hoed once a year in areas with poor soil. Sixteen years after leaving the nursery for the plantation, selective felling began among the maidens, at ten year intervals. Of the felled trees, the weakest and least useful were used for firewood and charcoal, while the rest were used for making construction beams, props for the shipyards or topmasts for ships. According to Jerónimo de Tavern, the appropriate proportion was for only 100 trees to be left of a plantation of 400 after sixty years. Pollards, on the other hand, were not felled, and were planted at spaced out intervals (rather than bunched together like the maidens) in order to ensure that their trunks did not grow too tall and long, but rather remained short and thick with a large number of branches. Once every ten years the pollards were pruned and all their branches cut off, although the trunk and two main guide branches were left intact. The further away from the trunk, the better the pruning, which is why Tavern recommended that seven years after being transplanted to the woodlands, the guide branches should be cut at a distance of 3.5 metres from the ground, leaving all the smaller branches.

Then, eight or ten years after this first cut, the smaller branches were pruned, leaving those most likely to produce curved wood intact. In this way, gnarls were avoided and the tree was able to grow strong and assume the shape necessary to obtain the wood required by the Royal and Merchant Navies. The best moment for these operations was as the moon was waning (this is true also for maidens destined for shipbuilding). In trees pollarded for the first time, the best period was between Saint Michael's day on 29 September and the feast day of the Blessed Virgin Mary on 25 March. For those that had already been pollarded, the best time was between 20 February and 25 March, although in exceptional cases they were sometimes cut in November and December. According to the Marquis of San Millán, the first pruning operation was to be carried out when the tree was neither too thick nor too thin. When the tree was small, the guide stem was removed (as explained above) and three or four

branches of half a metre or more in length (depending on the thickness) were left on each tree. It was important to ensure that none of the branches were located directly underneath any of the others, since the shade cast by the shoots on the upper branch would adversely affect those situated below. The Commissioners of Tolosa, Manuel Bernardino de Aranguren and José Joaquín de Martiarena, who were responsible for reviewing the writings of the Marquis of San Millán, warned that in Tolosa, where the aim was to obtain firewood rather than shipbuilding materials, the trees were guided while still too young, thus causing major irreparable damage. They therefore recommended that trees should not be pruned until the age of twenty, when they had acquired the necessary height of around 4.5-5.5 metres. Then, the last suitable top or stem should be cut and the branches left for pollarding.

Xavier Ignacio de Echeverría was an advocate of dense plantations in the case of maidens (recommending a distance of 9 metres to ensure that they grew tall), but not in the case of pollards, given that too small a distance between trees resulted in thinner branches from which hardly any planks could be obtained. Such wood was only appropriate for making charcoal, and was not suitable for shipbuilding. Therefore, based on Pedro Bernardo Villarreal de Bériz's theories, he recommended that pollards be planted at intervals of 4.5 metres on slopes and 8 metres on the flat, rather than at 6 metres as some recommended. During the first two pruning operations, the trees destined for shipbuilding purposes should be guided. These trees should be pruned or cut once every ten years, with every three trees producing one *carga* (150 kg) of charcoal. Over a period of 180 years, pollards could be pruned eighteen times, thus generating a profit of 36 *reales*, or even as much as 72 *reales* in the case of guided trees, thanks to the knees extracted from them. If, instead of felling the tree at the age of 180, its exploitation were to continue for another sixty years, to the age of 240, this would provide a further six cuts and an added profit of 52 *reales*.

Years later, in 1778, Jerónimo Tavern, a lieutenant and naval architect, warned in his book *Método instructivo para crear viveros y fomentar los montes* that selected felling should not be applied to these types of trees, since they did not need to be close together, like maidens, but rather should be spaced out. He therefore recommended that they be planted at intervals of 7.5 metres. For his part, José Odriozola recommended the planting of pollards, since they were absolutely vital to the construction industry. He also warned, however, that existing pollards were not suitable for shipbuilding because the *pendones* (i.e. the branches which grew either straight up or at an obtuse angle to the trunk) were too short and the *horcas* (i.e. those which grew at a right angle to the trunk) were disproportionate. In areas with high rainfall levels and a rich subsoil, he recommended leaving an *horca* of between 1.5 and 2 metres in length, located 2.8 metres from the *pendón*.

The technique was also applied to other trees species, not just oaks. In the case of beeches, walnuts, poplars, chestnuts, holms and ashes, Tavern established the same method as for oaks, although in the case of maidens destined for shipbuilding he recommended that the vertical and main stem not be cut, so as to respect the total length of the sapling. In the specific case of beech trees, he recommended that they be pollarded, since this enabled more firewood, charcoal and nuts to be produced, without having to cut the tree down to its base. According to José Odriozola, both chestnuts and walnuts should be planted very young at a distance of 3 metres and left to grow until they reached a thickness of half a metre. Next, the thinnest, or every other tree should be felled for use in the manufacturing of auxiliary craft. Once the selective felling operation was complete, the chestnuts and walnuts would be spaced at intervals of 5.5 metres, which would, logically, encourage greater growth. The trees should be pruned and pollarded once every thirteen or fifteen years, leaving three or four main branches at a height of between 1 and 1.5 metres. Finally, when mature, chestnuts should grow at intervals of 11 metres, once they have extended their branches, without being pruned or pollarded. The Marquis of San Millán

advocated pollarding once every twenty-four years, removing all the branches except one or two of the horizontal ones, although during the first pruning operation the main stem should be removed over the level of the horizontal branches. For their part, the Tolosa Commissioners believed that pollarding could be carried out once every eighteen years, if the chestnut was of a good age (i.e. mature or even old, never young). All the upward growing branches should be removed, while the horizontal ones should be left in order to harvest the fruit during the first years, following the pollarding procedure. José Odriozola recommended against planting these trees at too great a distance from each other, right from the start, given that the soil quality would suffer due to the rigours of the sun and summer heat. He also recommended that chestnuts be cut at a greater height (4.5-5.5 metres) in order produce, over time, boards of a good length and to prevent the trunk from rotting.

## Obstacles on the road to sustainability

The application of these techniques, however, had to overcome a series of major difficulties. Firstly, many of the plantations were lost before the wood could be harvested. In places such as Larraul, Ordizia, Legazpi, Hernani, Errenteria, Irun and Tolosa, between 1749 and 1808 around one third of all the trees planted were lost, while others such as Asteasu, Segura, Urretxu, Hondarribia, Oiartzun and Ataun lost only 10%. Perhaps the most flagrant case is that of Legazpi, which lost 84% of its plantations between 1776 and 1805, harvesting only 16%.

Secondly, as Jerónimo Tavern and the majority of the naval officers and forestry experts of the time had warned, due to the ignorance of those responsible for carrying out the pruning operations, there were only a very few pollards whose two guide branches grew in the necessary direction. In the majority of cases, a lot of bad faith underlay these practices, along with the vested interests of the nursery owners, eager to get their hands on the *1 cuartillo de real* paid by the Gipuzkoa Provincial Council for every tree

planted, the ironworkers and charcoal makers, eager to obtain a quick, safe harvest of firewood and charcoal, and the councils themselves, were eager to make a greater profit than that provided by selling the wood to the Royal Navy. All this meant that many trees, despite being marked for shipbuilding purposes, actually became unguided pollards (i.e. no guide branches were left). In light of the Crown's lack of cash and delays in payment, many towns attempted to make a profit from their forests by felling or pollarding (although without guides) young maiden trees, before they grew large enough to be suitable for building royal ships and were claimed by the Naval Authorities. This practice was reported in 1792 by Bernardino Corvera, the Navy Commissioner for Donostia. The practice grew so common that when in 1811, during the Napoleonic occupation, the Governor of Biscaya, Thouvenot, ordered the Province to conduct a survey to determine the status of the Navy's forests, in the whole of Gipuzkoa only 175 trees were found to be suitable for the purposes of shipbuilding.

Thirdly, given that the forests of Gipuzkoa were responsible, through contractors, for supplying the Naval dockyards, such as the one at Ferrol, another factor that should not be overlooked is the terrible destruction wreaked on them by the needs and requirements of the Royal Navy throughout the whole of the 18th century, and particularly between 1749 and 1794. Proof of this is the survey conducted in 1784 by the provincial authorities, in which of the approximately 11 million trees counted in Gipuzkoa, only 1.5% (156,132) were ripe or suitable for use in the manufacture of royal ships, either as maidens or as pollards. Of this 1.5%, the vast majority (97,403) were young trees which would provide the required timber in the future. Only 16,476 were mature maidens and 42,253 mature pollards, capable of providing curved timber (for bow pointers, first futtocks, beam knees, etc.). After the disaster at Trafalgar, the pressure exerted by the naval authorities on the forests of Gipuzkoa disappeared, although the needs of the Merchant Navy prompted the Mountain Ordinances drafted by the Province in 1815 to state that at least  $\frac{1}{3}$  of all woodland areas be

dedicated to maiden trees and the remaining  $\frac{2}{3}$  to pollards. The Ordinance also ruled that young woodland areas located in river basins situated within one league of the sea be dedicated to maiden trees, for future use in the shipbuilding industry.

Fourthly, another major problem was the shortening of the intervals between cuts, since the recommended ten year intervals and the twenty and fourteen year-long intervals established at the woodland auctions were not respected, and pruning was carried out once every seven or eight years. As the eighteenth century advanced and the demand for firewood for kitchen stoves increased, cutting intervals became shorter, as reported by the *Real Sociedad Bascongada de Amigos del País* in 1766 and by the Marquis of San Millán in 1788. The harm this practice caused was fourfold. Landowners suffered because many thin, young branches were wasted and much shade was eliminated. Indeed, a forest pruned once every eight years enjoyed only five years of shade, since during the first three years the new shoots and branches provided little protection, especially compared to forests pruned once every thirteen years, which enjoyed ten years of shade, which in addition to keeping the soil moist, also provided a greater quantity of dry leaves and fertiliser, causing the trees themselves to grow stronger. The ironsmiths, despite having to pay the same price, got less firewood for their money and needed more labour to remove it, thus increasing the price of each load. The practice also harmed the villagers, who had less firewood for their kitchens and other uses. And finally, the tree itself gradually died as a result of too frequent pruning.

Between the sixteenth and eighteenth centuries, a permanent conflict raged between the naval authorities and the ironsmiths regarding the cutting and pollarding method applied. The naval authorities always demanded that the trees be pollarded, leaving guide branches in order to render them suitable for use in shipbuilding. Despite their insistence, however, the demands of the naval authorities were rarely respected, as shown in the complaints made by the aforementioned Tavern. The charcoal makers and ironsmiths

were aware of the demands made by the naval authorities, but were more concerned with their own interests and failed to respect the guidelines established by the Navy Commissioners during their visits. The charcoal makers and woodcutters were not receptive to new ideas which required the shared exploitation of woodlands, and continued to cut wood and firewood in the same way as they had for centuries, i.e. felling from the stump, unguided pollarding and selective felling. The main complaints aired by the naval authorities in their visits to the woodlands of Gipuzkoa focused on the methods used by charcoal makers during the first and second pruning operations. It is true that the methods used by ironsmiths, who cut the branches randomly, in any direction, caused the tree to store water in its trunk, thus causing gradual but unstoppable rot to set in. Cuts needed to be made in such a way as to ensure that the water was allowed to fall to the ground, rather than be retained. During the middle of the eighteenth century, the Commissioner denounced the poor management of the majority of the Gipuzkoan councils, with the exceptions of Tolosa and Ataun. Consequently, following the instructions of the Navy Commissioners, many places appointed a “specialist person” to make the cuts, so as to avoid leaving the task in the hands of the charcoal makers. Nevertheless, as Commissioner Garmendia stated in 1780, the town councils failed to follow the guidelines which stated that the cuts should be made by those qualified in the building of ships for the Royal Navy.

## Conclusions

Perhaps the model of tree that offered the widest variety of uses and which was able to combine the greatest number of exploitations was the guided or shaped pollard, also known as *ipinabar*, *guión* or guided tree – be it oak, beech, chestnut or alder. This model of forestry exploitation, therefore, enabled a single tree or forest to respond to the needs of a range of production activities, while at the same time increasing productivity. Nevertheless, despite the fact that, repeatedly and over the course of three centuries, the Gipuzkoan authorities and the Navy

demanded and ordered, by means of binding legislation, that pruning and pollarding be carried out leaving guide branches in the *horca y pendón* style, the majority of ironsmiths, woodcutters, foresters and charcoal makers failed to comply. The same, however, was not true of carpenters or shipwrights. This twofold practice resulted in two types of tree, despite the fact that, in theory, a single model was followed: pollards and guided pollards, with *horca y pendón* guide branches.

Although the practice and use of pollarding without guides has survived almost to the modern day, guided pollarding has been lost to history. The decline of the shipbuilding industry linked to the Royal Navy following the defeat at Trafalgar, the gradual disappearance of timber-based shipbuilding during the 19th century, the import of exotic wood and foreign species, the voracity of the Gipuzkoan iron and steel industry which survived right up to the last third of the nineteenth century, the destruction wreaked during wartime (War of the Convention, War of Independence and the Carlist Wars), confiscation processes and the spread of agriculture and livestock farming all resulted in the disappearance of this forest husbandry model, the recollection of which now only remains in our collective memory. While everyone knows of the existence of pollard trees, because many beech groves and a few isolated oak groves still survive today with these characteristics, only a very few examples of guided pollards (*ipinabarros*) survive today in the province. Curiously, the majority of them are mistaken for unguided pollards, used basically for the production of charcoal, rather than recognised for what they really are. This view is not only deeply rooted among the general population, but is also prevalent among Basque historiographers.

As with artistic and architectural monuments, these trees should be preserved and looked after for what they really are: true biological monuments and mute witnesses of a bygone era. The system is one which continues to be used today in other areas of Spain, since in the pasturelands around Madrid and Salamanca, holm oaks are still

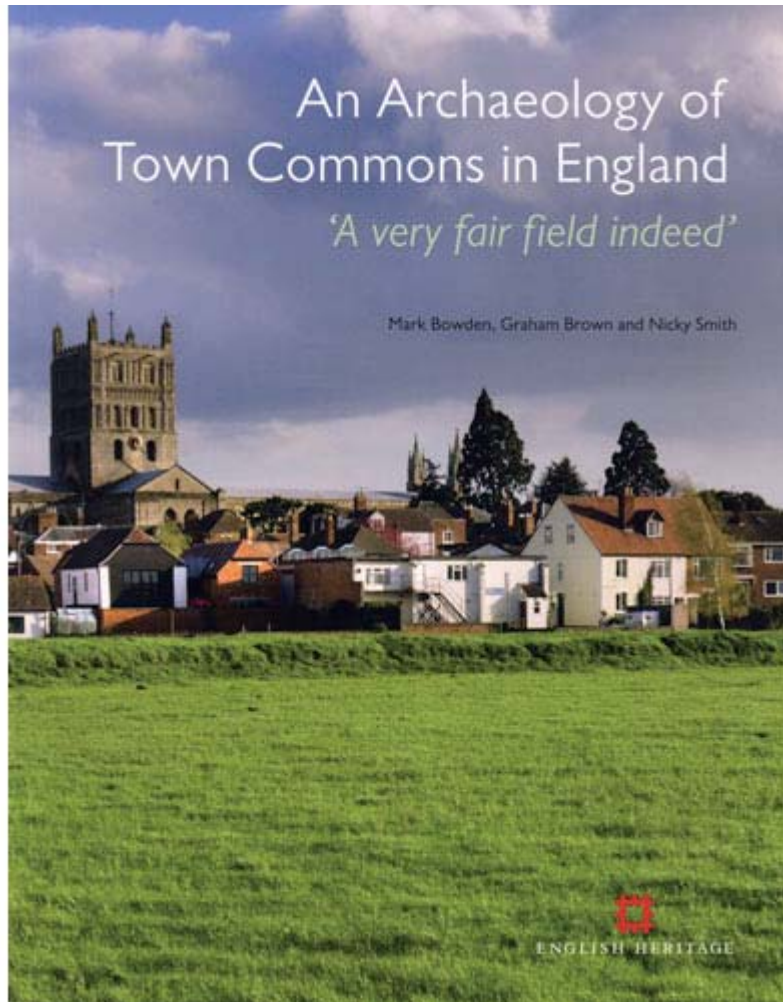
pollarded and guided in order to obtain forage for livestock and firewood for both domestic and commercial charcoal. The recovery of the technique of guided pollarding would enable a more sustainable development of the province's forestry heritage, and would foster biodiversity, since pollard forests enable the formation and development of specific biotopes.

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This volume of papers was published as part of a major event 'The End of Tradition'? conference organised by Professor Ian D. Rotherham and colleagues held in September 2010 at Sheffield Hallam University. A companion volume Vol 8 (2) 'Commons - Current Management and Problems' was also published; this includes papers by other speakers at the conference, including Professors Rotherham, Kenneth Olwig, Adrian Newton and Minoti Chakravarty-Kaul.

*The threats from global cultural change and abandonment of traditional landscape management increased in the last half of the twentieth century and ten years into the twenty-first century show no signs of slowing down. Their impacts on global biodiversity and on people disconnected from their traditional landscapes pose real and serious economic and social problems which need to be addressed now. The conference addressed the fundamental issues of whether we can conserve the biodiversity of wonderful and iconic landscapes and reconnect people to their natural environment. And, if we can, how can we do so and make them relevant for the twenty-first century.*

