

# TREE SURVEY OF COUNTY WATERFORD

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environmental consultants

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## TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION</b>	<b>5</b>
<b>1.1</b>	<b>Importance of trees in an urban context</b>	<b>5</b>
<b>1.2</b>	<b>Objectives</b>	<b>5</b>
<b>2.</b>	<b>METHODOLOGY</b>	<b>6</b>
<b>2.1</b>	<b>Dublin City Council methodology</b>	<b>6</b>
<b>2.2</b>	<b>Waterford Tree Survey methodology</b>	<b>7</b>
<b>2.3</b>	<b>Data analysis and GIS dataset production</b>	<b>11</b>
<b>3.</b>	<b>RESULTS</b>	<b>11</b>
<b>3.1</b>	<b>Maintenance</b>	<b>11</b>
<b>3.2</b>	<b>Species selection</b>	<b>12</b>
<b>3.3</b>	<b>Town summaries</b>	<b>13</b>
<b>3.4</b>	<b>Results overview</b>	<b>30</b>
<b>4.</b>	<b>RECOMMENDATIONS</b>	<b>35</b>
	<b>REFERENCES</b>	<b>37</b>

## TABLES AND FIGURES

<b>Table 1.</b>	<b>Description of parameters recorded during group tree survey</b>	<b>8</b>
<b>Table 2.</b>	<b>Description of parameters recorded during individual tree survey</b>	<b>10</b>
<b>Figure 1.</b>	<b>Cappoquin Tree Groups Map</b>	<b>14</b>
<b>Figure 2.</b>	<b>Cappoquin Level of Importance Map</b>	<b>15</b>
<b>Figure 3.</b>	<b>Dunmore East tree group map</b>	<b>16</b>
<b>Figure 4.</b>	<b>Cappoquin Level of Importance map</b>	<b>17</b>
<b>Figure 5.</b>	<b>Kilmacthomas Tree Groups map</b>	<b>18</b>
<b>Figure 6.</b>	<b>Kilmacthomas Level of Importance map</b>	<b>19</b>
<b>Figure 7.</b>	<b>Kilmacthomas Tree Groups map</b>	<b>20</b>
<b>Figure 8.</b>	<b>Lismore Level of Importance map</b>	<b>21</b>

<b>Figure 9.</b>	<b>Portlaw Groups of Trees map</b>	<b>22</b>
<b>Figure 10.</b>	<b>Portlaw Level of Importance map</b>	<b>23</b>
<b>Figure 11.</b>	<b>Stradbally Tree Groups map</b>	<b>24</b>
<b>Figure 12.</b>	<b>Stradbally Level of Importance map</b>	<b>25</b>
<b>Figure 13.</b>	<b>Tallow Tree Groups map</b>	<b>26</b>
<b>Figure 14.</b>	<b>Tallow Levels of Importance map</b>	<b>27</b>
<b>Figure 15.</b>	<b>Tramore Tree Groups map</b>	<b>29</b>
<b>Figure 16.</b>	<b>Tramore Levels of Importance map</b>	<b>30</b>
<b>Figure 17.</b>	<b>Tree age categories in each town.</b>	<b>31</b>
<b>Figure 18.</b>	<b>Street age (years) categories in each town</b>	<b>32</b>
<b>Figure 19.</b>	<b>Structural condition of trees in each town.</b>	<b>33</b>
<b>Figure 20.</b>	<b>Physical condition of trees in each town.</b>	<b>33</b>
<b>Figure 21.</b>	<b>Average height of trees in each town</b>	<b>34</b>
<b>Figure 22.</b>	<b>Average stem diameter of trees in each town</b>	<b>35</b>

## **APPENDICES**

<b>Appendix 1.</b>	<b>Survey codes and descriptions</b>	<b>38</b>
<b>Appendix 2.</b>	<b>Photographs</b>	<b>43</b>

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## **1. Introduction**

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DixonBrosnan environmental consultants were commissioned by Waterford County Council to carry out tree surveys at eight towns and villages within County Waterford – Cappoquin, Dunmore East, Kilmacthomas, Lismore, Portlaw, Stradbally, Tallow and Tramore. Survey work was carried out by Mark Donnelly B.Sc. who has extensive experience in carrying out tree surveys in Ireland and the UK. Additional survey work was carried out by Carl Dixon B.Sc. who also served as project manager.

### **1.1 Importance of trees in an urban context**

Trees are of significant ecological value in their own right and also support important keystone species. In particular, trees support bats, birds and invertebrates by providing a roosting, nesting, feeding and commuting function. They also contribute to air quality, water attenuation and the amenity value of the town and, by contributing to streetscapes and vistas, are an important component of a town's character. Trees are also part of the historical and architectural setting of an area. On the edges of towns, trees are often found in hedges which provide valuable nesting habitat and connectivity between habitats. Trees may also occur in small woodlands which may be of high ecological value in a local context. Despite their importance, trees are rarely formally assessed and protected. Although Tree Protection Orders are available, they are generally specific to individual trees and are often used only for mature trees of obvious high value.

### **1.2 Objectives**

The objective of the current study was to identify the individual trees and stands of trees found within the relevant towns on public managed land and to determine their landscape, recreational and ecological value. The data was

provided within a GIS linked database, in order to provide a practical tool for future management of trees and for the integration of the data within the planning process. The condition of trees, and in particular mature trees, was also assessed. The information collected was be used to make recommendations on management and maintenance of trees and to assist in tree management and protection in an urban context.

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## 2. Methodology

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### 2.1 Dublin City Council methodology

The methodology for the current survey was based on the Dublin City Council Urban Tree Survey and Methodology Development project (O' Riain, 2008). This survey, which was carried out during 2007, covered areas accessible to the public and thus did not survey private land. O' Riain (2008) identified a detailed methodology which it considered most efficient for a field survey of this type. They employed a three tier system based on three levels of survey entitled streetscape survey, tree survey and tree inspection. These survey methodologies are detailed in **Sections 2.1.1-2.1.3**.

#### *2.1.1 Streetscape Survey*

The streetscape element of the survey takes into account the overall treescape and architectural context, while also summarising tree species and tree character on the street. It therefore takes many of the survey elements of a tree survey and applies this to the overall street, while also including additional elements. This level of survey provided an overview of trees including visual impact, street character, function, requirement for tree survey and general ecological aspects. A standardised recording form was used for this survey.

#### *2.1.2 Tree Survey*

The field-based tree survey methodology included all elements of the British Standard BS 5837:2005 (Helliwell, 2000). The survey covered a

representative sample of trees where trees were relatively uniform. The assessment included management requirements, need for risk assessment, condition and ecological value.

### *2.1.3 Tree Inspection*

A more detailed tree inspection was also carried out, with particular emphasis on health and safety aspects. Desirability of retention or removal, whether long or short term was specified and pruning, pollarding or other measures were recommended.

## **2.2 Waterford Tree Survey methodology**

### *2.2.1 Methodology overview*

Although based on the survey methodology used in O’Riain (2008), this methodology was modified for the purposes of the current survey. Primarily this was due to the following:

- The limited size of the towns meant there was a greater proportion of rural trees
- A digital recording device was not used for the survey and therefore data was hand recorded
- Time and budgetary constraints.

The category recording protocols utilised by O’Riain (2008) were continued for the current survey and thus the same data was recorded. However the standard recording sheets for the three different survey methodologies (**Sections 2.1.1-2.1.3**) were combined into a single recording sheet for the Waterford Tree Survey. This allowed for more efficient data collation. Although there was less emphasis on differentiating the three types of survey, appropriate techniques were implemented through out the study.

For the Waterford Tree Survey, two broad categories were used, namely groups of trees and individual trees. Trees of similar age and size were recorded as groups. This category included planting on boulevards, new

housing estates and roadsides. Although such groups could potentially cover a relatively wide geographical area, the distance between trees classified as groups did not exceed 25 m. Subdivision of groups was carried out where the mix of species and age class was particularly complex (e.g. Lismore Cathedral graveyard) or where notable individuals and groups of trees needed to be distinguished from other trees in the same area.

Larger individual trees or trees considered of high value were recorded separately and in more detail. However this occurrence was relatively rare during the survey.

### 2.2.2 Groups of trees - data recorded

Parameters recorded for groups of trees are listed in **Table 1**. Categories within each of these parameters are described in **Appendix 1**.

<b>Table 1. Description of parameters recorded during group tree survey</b>	
<b>Parameter</b>	<b>Description</b>
Street name and GIS coordinates	This allows for identification of each group within the GIS database
Street function	Provides a classification of the street and includes categories such as residential, commercial etc.
Street age	An estimate of the age of the street based on its structure, housing style and O.S. maps.
Tree format	Records whether trees are part of groups, occur within hedgerows, groups, boulevard etc.
Name	The common and scientific names recorded and each tree species assigned a code i.e. alder (Ald), bay (By) etc.
Age	Estimate of tree age, allowing trees to be categorised into a number of age classes i.e. young, middle aged, veteran etc.
Physical and structural condition	Trees were divided into classes based on their physical and structural condition.
Estimated Remaining	Category grading BS 5857:2005



<b>Table 1. Description of parameters recorded during group tree survey</b>	
<b>Parameter</b>	<b>Description</b>
Contributing years (ERC)	The British Standard BS 5857:2005 divides trees into to a number of classes based on arboricultural criteria e.g. <10, 10-20 years etc
Importance	<p>The relative importance of each tree or group of trees was assessed in relation to its value in an arboricultural, landscape, cultural and biodiversity context.</p> <p>For each of these four categories a tree was assessed as being of high importance, moderate importance and low importance.</p>
Habitat classification	<p>Recorded where trees correspond to standard habitat classifications as detailed in the Heritage Council publication <i>A guide to habitats in Ireland</i> (Fossit, 2000).</p> <p>This aided in the categorisation of more extensive or rural woodland.</p>

### *2.2.3 Individual trees - data recorded*

Parameters recorded for individual trees are listed in **Table 2**. Categories within each of these parameters are described in **Appendix 1**.

**Table 2. Description of parameters recorded during individual tree survey**

Parameter	Description
Street name, GIS coordinates and species	Allows for the identification of each individual tree within the GIS database
Location	This describes the type of location in which the tree occurs i.e. woodland, hedgerow, park etc.
Crown diameter and stem diameter	Both dimensions indicates the size of the tree
Age category	Age of the tree estimated; each tree then included in an appropriate age class i.e. young, middle aged, veteran etc
Physical and structural condition	Trees were divided into classes based on their physical and structural condition.
Estimated Remaining Contributing years (ERC)	Category grading BS 5857:2005 The British Standard BS 5857:2005 divides trees into to a number of classes based on arboricultural criteria e.g. <10, 10-20 years etc
Importance	The importance of each tree was assessed based on its landscape, cultural and biodiversity value. An overall category of importance was then assigned based on these criteria
Context	This category assessed the value of a given tree in relation to the surrounding landscape. Within this category trees were assessed under the following categories; Importance of positioning, presence of trees, relation to setting, physical form and biodiversity

## 2.3 Data analysis and GIS dataset production

Information from the field surveys was transferred into a Microsoft Excel spreadsheet and incorporated onto the Project GIS. A number of datasets were produced relating to group and individual tree surveys. The GIS is a powerful statistical analysis tool and the data can be interrogated to extract various pertinent statistics from a general, streetscape character level to an individual species level.

A detailed GIS datasets containing information about individual trees and the associated streetscapes was produced. These datasets included layers of information pertaining to maps illustrating statistical output from a streetscape to a species level.

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## 3. Results

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### 3.1 Maintenance

All of the towns surveyed had tree populations which were heavily skewed towards young trees i.e. planted post 1990. This included trees planted during recent housing developments and new road construction (**Photo 1** and **Photo 2**). Another planting period was recognised from approximately 1960 to 1990 (**Photo 3**). This planting period was less extensive and again linked to housing developments of that era as well as churchyards, schools and amenity areas within the towns.

Trees planted prior to 1960 were few in number and generally confined to trees planted by the local authority on roadsides and amenity areas as well as trees in the 100-200 year old category, which were part of Georgian and Victorian planting schemes.

Generally maintenance was deemed appropriate and effective, although there was some variation between the towns. Of particular concern is the lack of formative pruning of young trees to prevent safety issues such as acute forks in developing crowns. Pruning would also help in maintaining the aesthetic appearance of trees as they develop.

### **3.2 Species selection**

There was a predominance of trees with smaller dimensions such as rowan, whitebeam, field maple and hornbeam. These trees were recorded in a variety of locations where larger trees would be more appropriate. For example rowan, although attractive when younger and of some wildlife value, rarely develops into a mature tree with good form in roadside situations. There is also a tendency to create mixes of various species to create an “arboretum” effect in inappropriate locations. This is most evident on roadsides (e.g. Deerpark road, Lismore).

It is essential that correct trees are chosen to suit the site i.e. trees with a long life-span such as beech, oak and sweet chestnut, should be planted only where there is adequate space to develop. This could include roadside areas and housing developments.

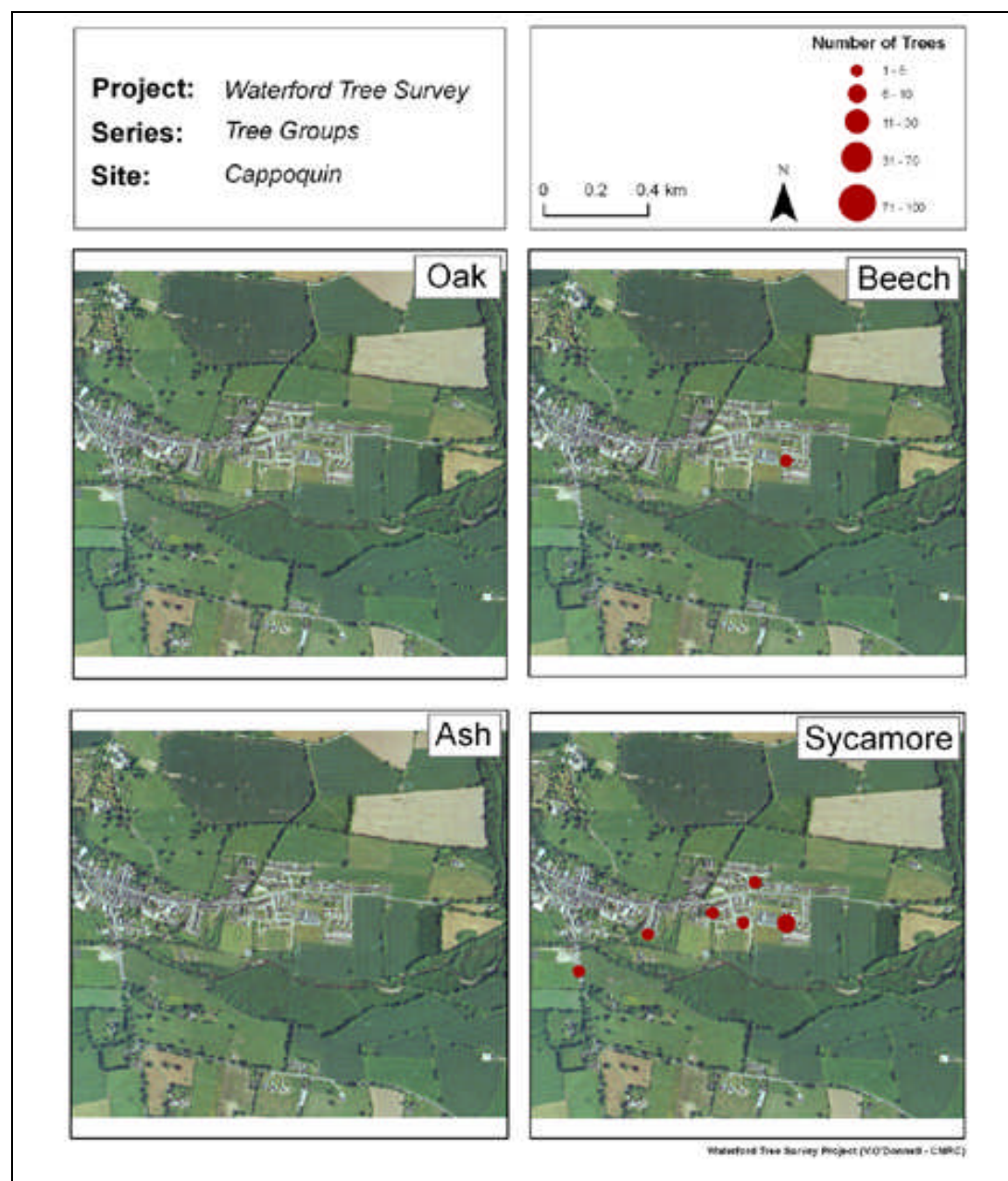
It is important for any planted tree that the final dimensions or potential dimensions (i.e. girth, height and canopy width), probable form (i.e. multi-stemmed etc) and longevity are considered before a decision is made to utilise a given tree species. A greater emphasise on trees with longer life spans should also be considered. Native species such as oak, ideally derived from native stock, are most valuable from a cultural and ecological viewpoint. For example Norway maple is particularly common within the surveyed areas and in many of these circumstances oak may be a more appropriate choice. However trees such as lime and sweet chestnut may also be valuable from an aesthetic viewpoint.

Native trees support more invertebrate species and are considered to be of greater ecological value than non-native species. It is noted however that individually planted trees do not provide the same micro-climatic conditions and ecological niches which exist within woodland areas or, to a lesser degree, within hedgerows (**Photo 4**). Whilst it is preferable to have native species, derived from local sources within planting schemes, it is also important to consider other aspects such as longevity, landscape value and cultural value. Therefore exclusive use of native species may not always be appropriate.

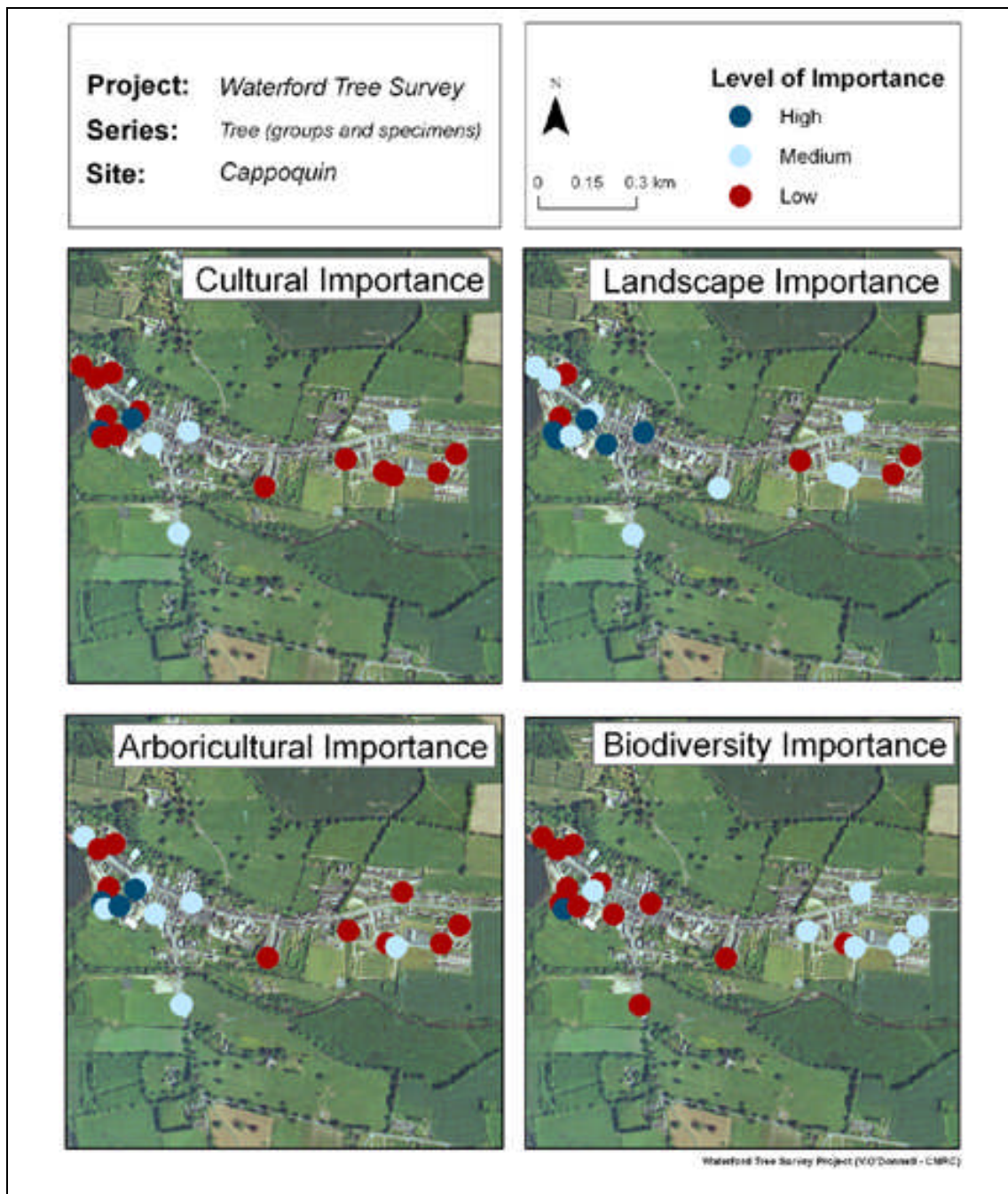
### 3.3 Town summaries

#### 3.3.1 Cappoquin (**Figure 1** and **Figure 2**)

The town Cappoquin, one of the larger settlements in West Waterford, is located approximately 19 km northwest of Dungarvan on the N72 Mallow to Dungarvan road. A town of very few mature trees, Cappoquin is however surrounded by a well wooded landscape with some fine specimen trees. Some interesting choices of exotic species were noted within the town e.g. swamp cypress (**Photo 5**). However overall there appears to a lack of large amenity areas where trees could make a significant contribution.



**Figure 1. Cappoquin Tree Groups Map**



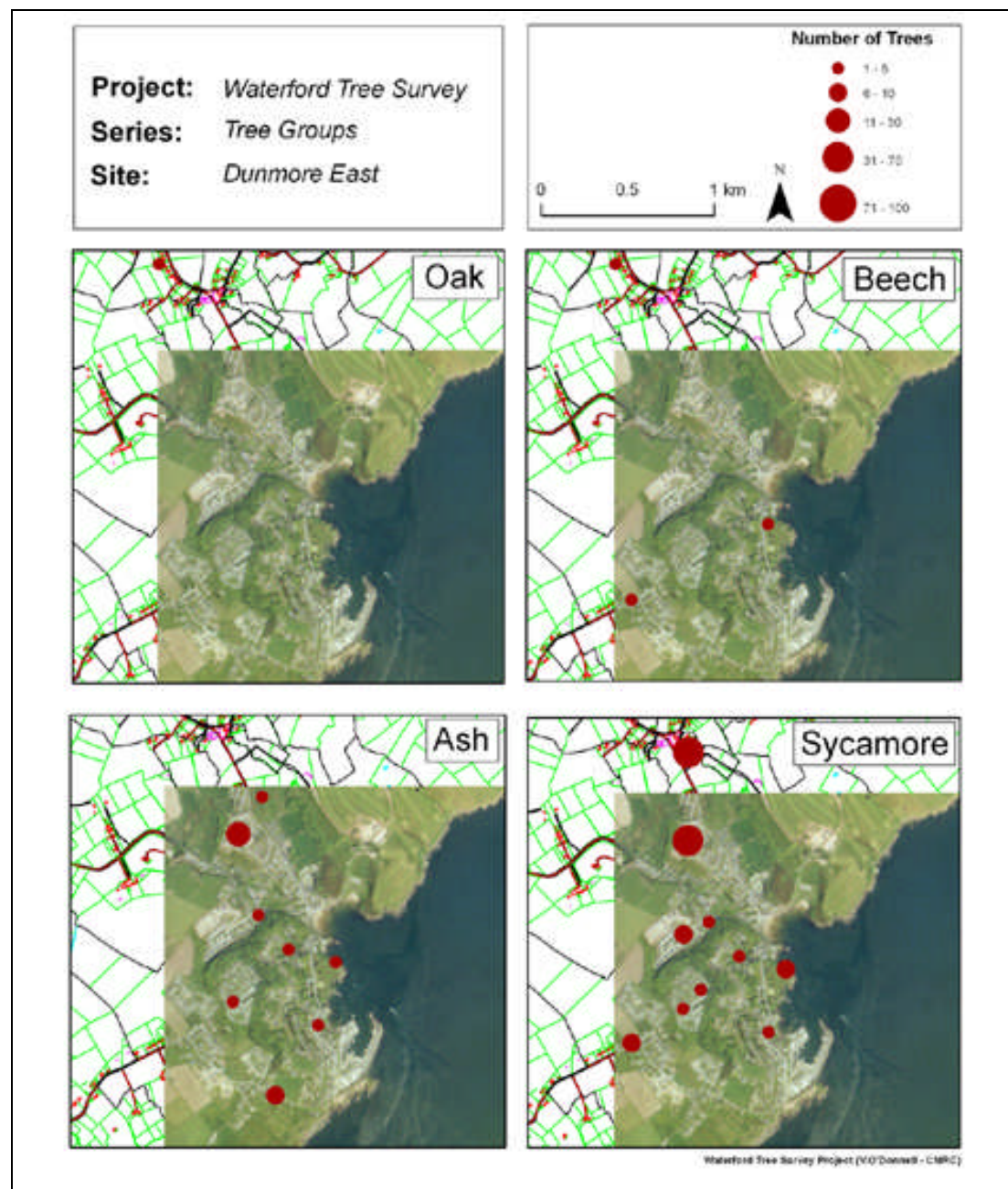
**Figure 2. Cappelquin Level of Importance Map**

### 3.3.2 Dunmore East (Figure 3 and Figure 4)

Dunmore East is a coastal town located approximately 8 km southeast of Waterford City. Trees make a particularly valuable contribution to the landscape of the town. Dunmore East Woods provides a backdrop and contrast with the conifer dominated amenity parks and privately owned trees, many of which are also conifers (**Photo 6**). The high levels of exposure and salt laden winds dictate species choice with Monterey cypress, evergreen oak and sycamore being the most successful species. There are notable

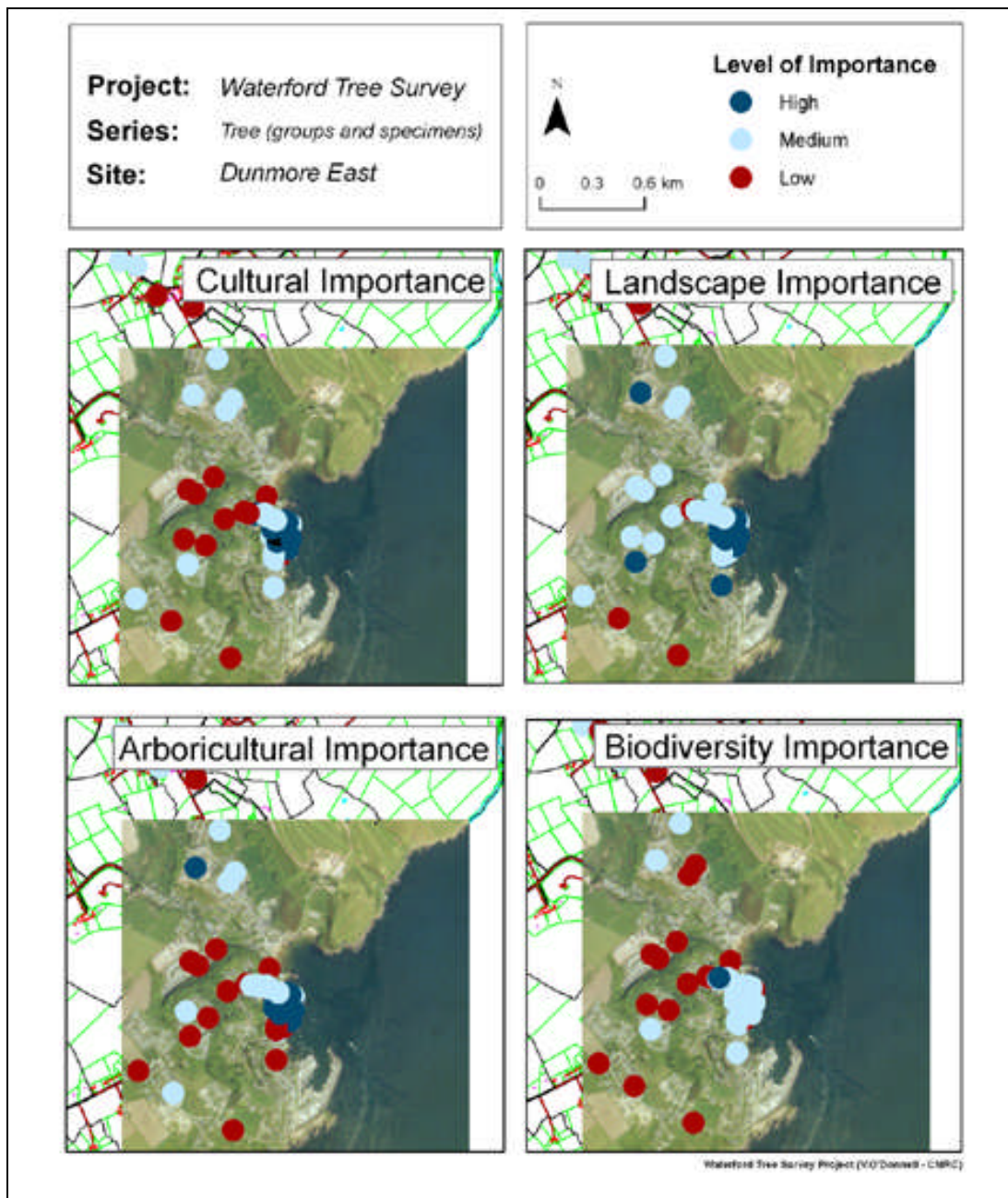


individuals in the amenity areas where Monterey pine and evergreen oak in particular stand out (**Photo 7** and **Photo 8**). However there has been very little replacement planting of these species in the last 100 years. If the character of the town is to be perpetuated it is recommended that recently planted species such as whitebeam, Norway maple and rowan are substituted in any new planting with evergreen oak and pine species.



**Figure 3. Dunmore East tree group map**





**Figure 4. Cappoquin Level of Importance map**

### 3.3.3 Kilmacthomas (Figure 5 and Figure 6)

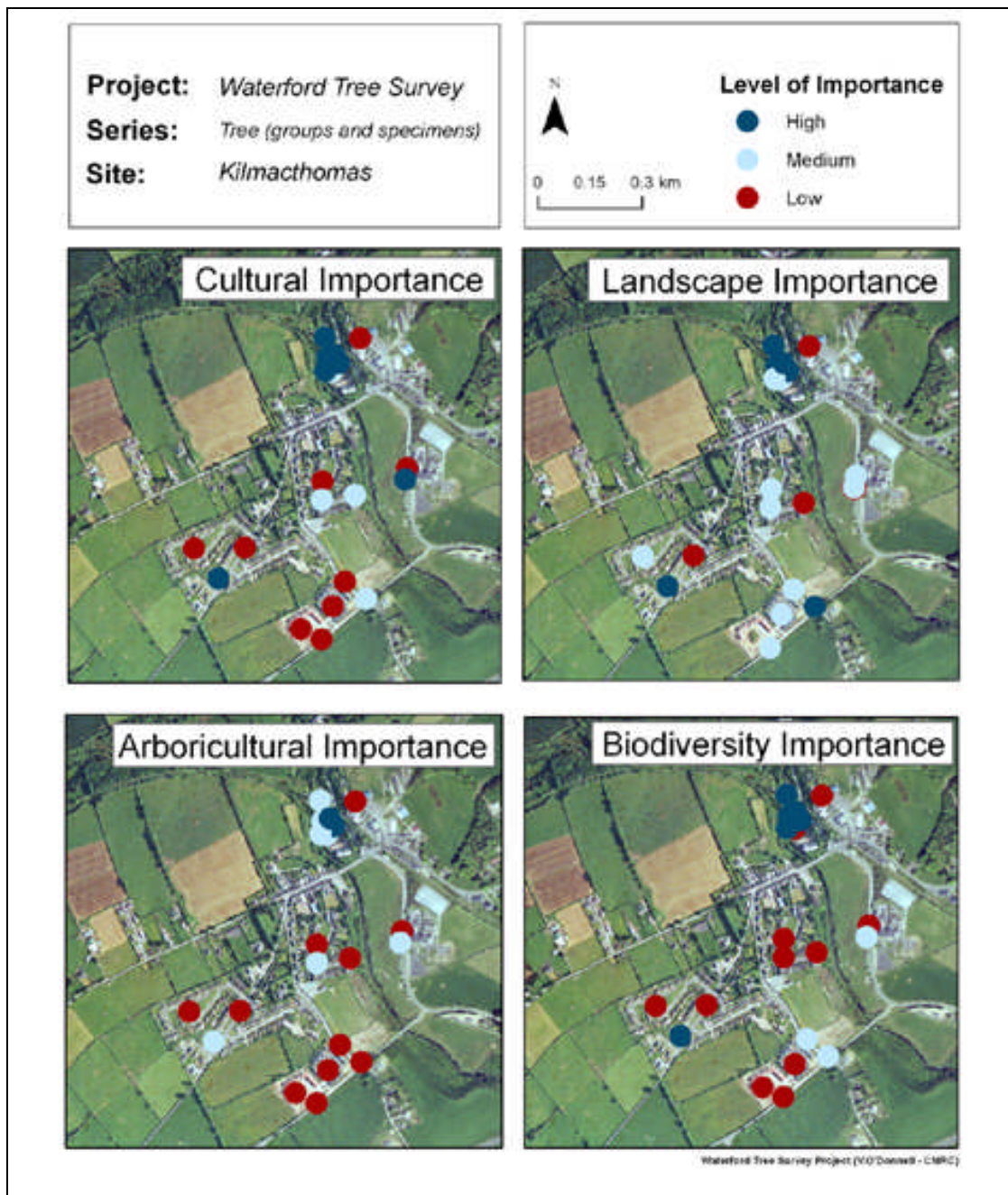
The village of Kilmacthomas is located approximately 20 km west of Waterford City close to the N25 Cork to Waterford road. With the exception of Mahon Mills and established housing developments such as Hillside, there are few trees in Kilmacthomas. Standards of maintenance are low in places e.g. Hillside where there are very few trees and where tree condition is poor (**Photo 9**). The choice of tree is not always appropriate and longer lived trees should be considered. An example of this occurs along the roadside leading to

St. Declan's Community School, which has been planted with 80% cherry with a likely lifespan of less than 50 years (**Photo 10**). This town would lend itself to more extensive areas of woodland along the valley for example.



**Figure 5. Kilmacthomas Tree Groups map**



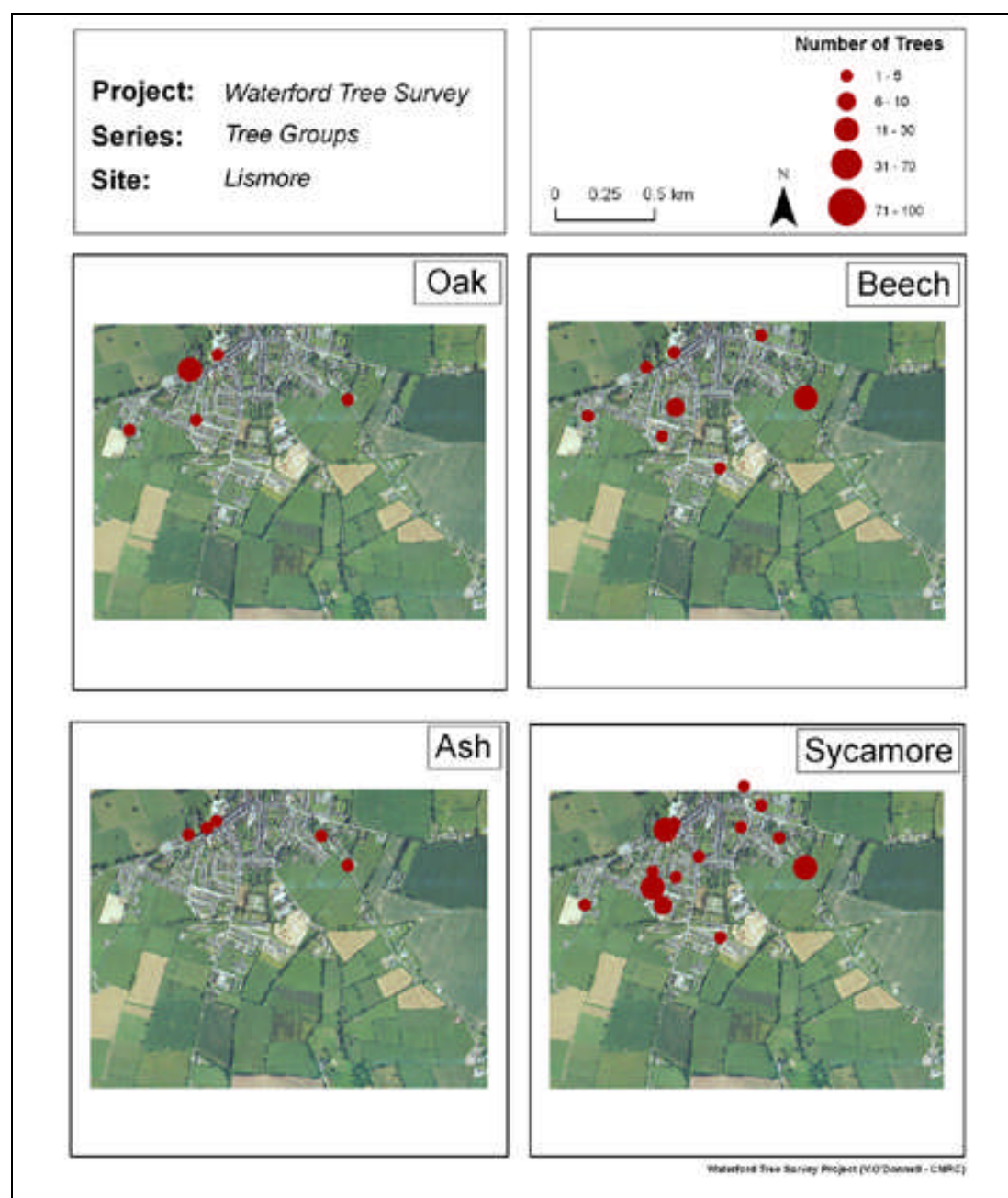


**Figure 6. Kilmacthomas level of importance maps**

#### 3.3.4 Lismore (**Figure 7** and **Figure 8**).

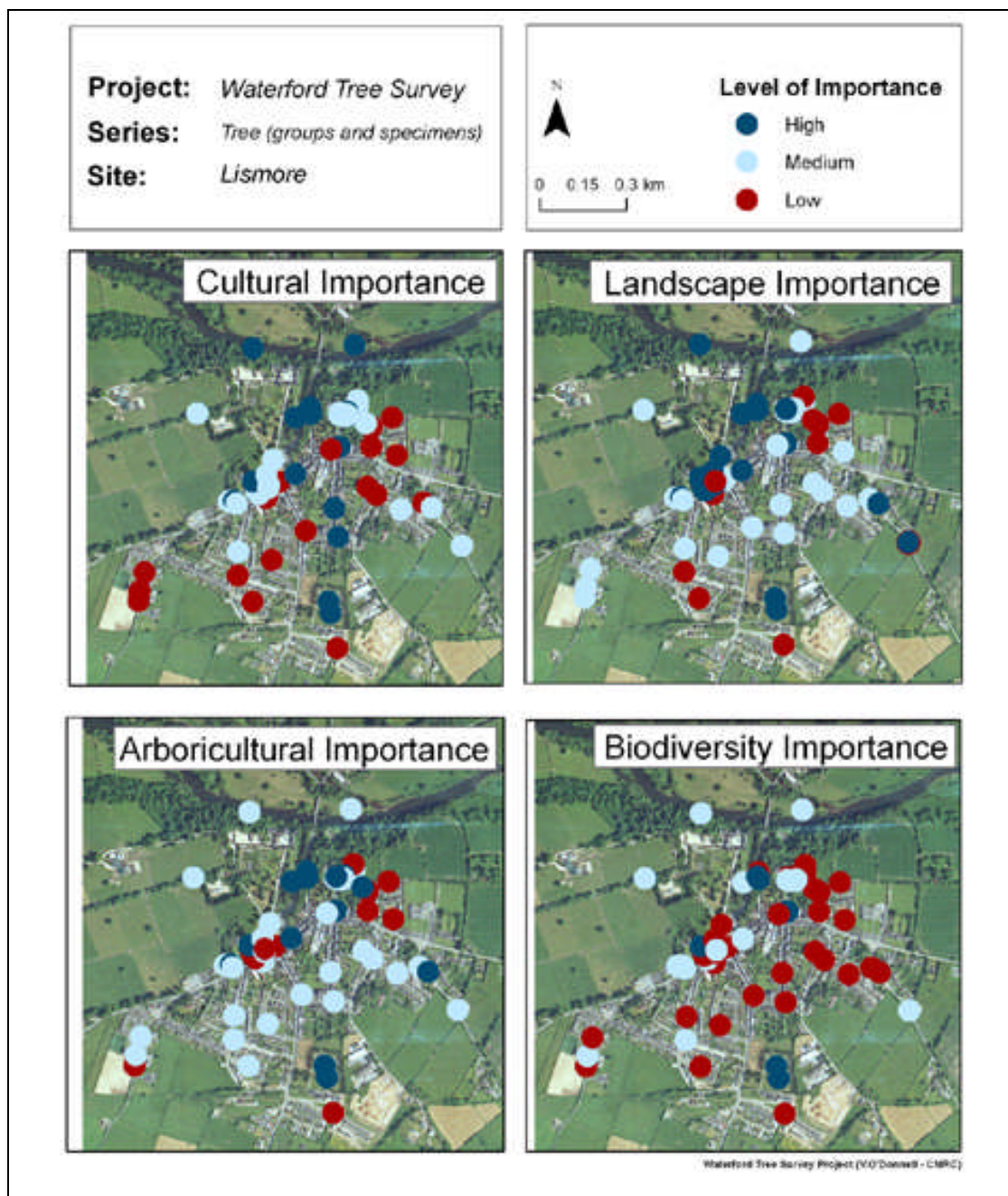
Located approximately 20 km northwest of Dungarvan, is the heritage town of Lismore. Trees within Lismore are generally well maintained with an appropriate choice of species. An exception is the use of rowan, which rarely thrives on roadside locations and should be substituted (birch for example would be more appropriate) (**Photo 11**). Mature trees are associated with the Lismore Castle Estate and also occur on church property (**Photo 12**). The estate is associated with large forest tree species and perhaps more

emphasis on these species i.e. oak, sweet chestnut, beech and lime, would be more appropriate to the character of the town. Suitable locations would be on the approach roads, such as Deer Park road. The management of veteran trees is demonstrated at Lismore Cathedral, where over mature lime trees are managed safely as pollards, preserving their aesthetic, historical and cultural values (**Photo 13** and **Photo 14**)



**Figure 7. Lismore Tree Groups map**





**Figure 8. Lismore Level of Importance map**

### 3.3.5 Portlaw (Figure 9 and Figure 10)

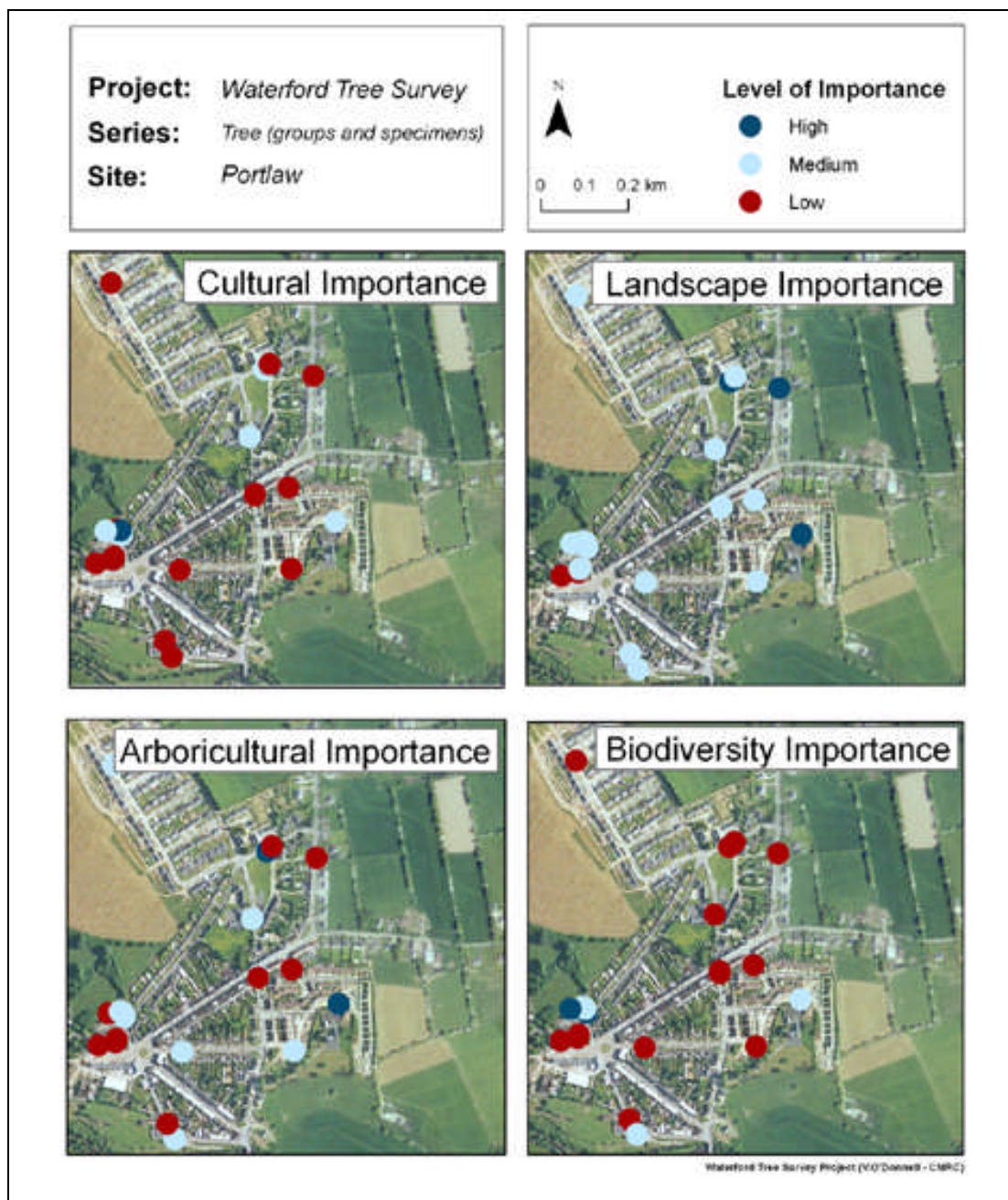
The town of Portlaw is located approximately 21 km to the north-west of Waterford City, at the head of the tidal reaches of the River Clodiagh, a substantial tributary of the Suir. Mature trees were recorded in the churchyard including notable evergreen oak. The retention of mature horse chestnut in the new development off Queen Street upper is also to be commended. Elsewhere the trees are young to middle aged and well maintained. The

establishment of a lime grove in the amenity area adjacent to Connolly Road will be a prominent feature in future years.



**Figure 9. Portlaw Groups of Trees map**





**Figure 10. Portlaw Level of Importance map**

### 3.3.6 Stradbally (Figure 11 and Figure 12)

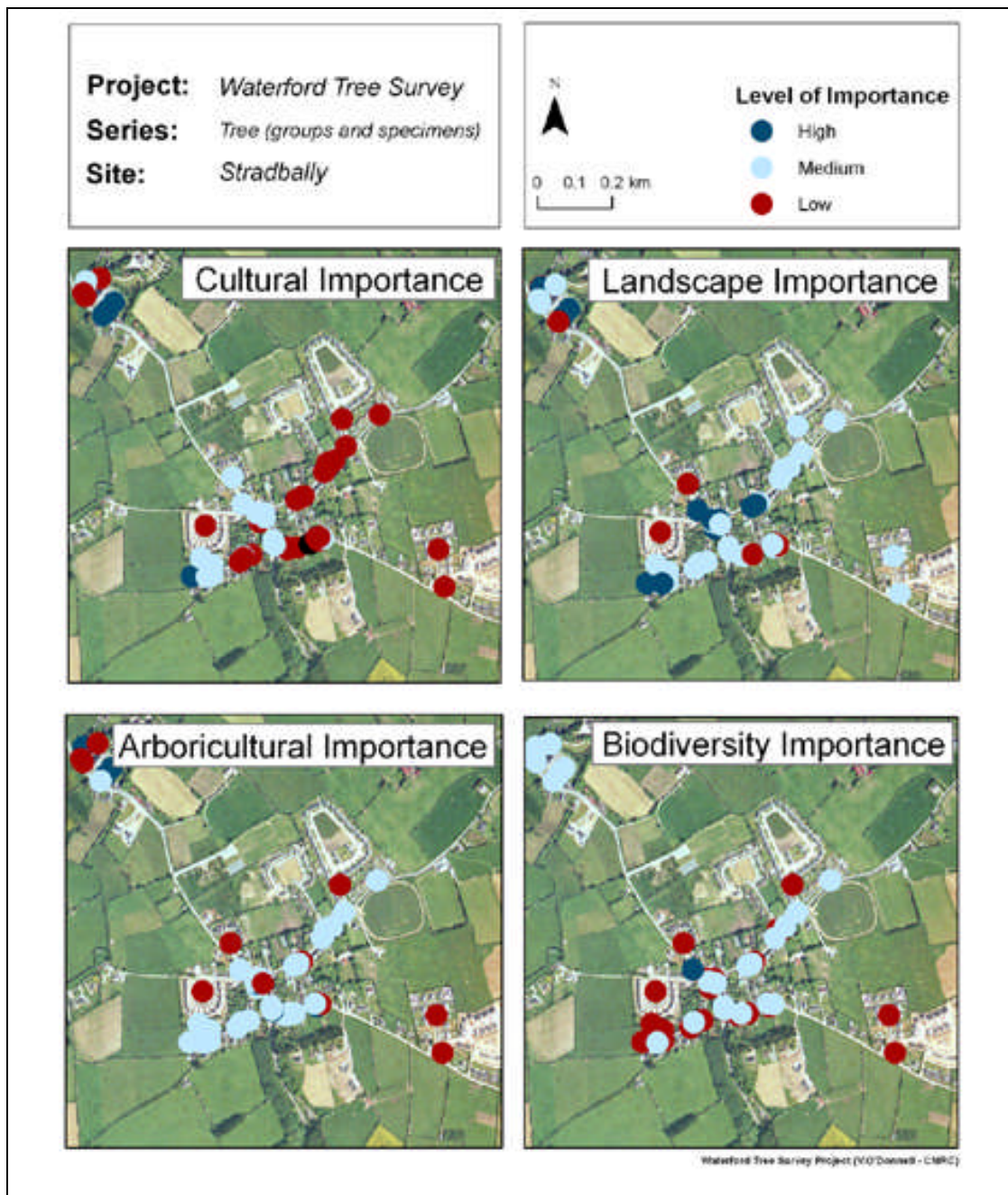
Located approximately 35 km southwest of Waterford City is the medieval village of Stradbally. Mature trees within the town are restricted to churchyards. The younger trees are predominantly less than 20 years old and, with the exception of some more recent housing developments, are well maintained. Of particular note is the town square where five specimen trees including black walnut and beech were recorded (**Photo 15**). In the landscape surrounding the town, large trees are generally confined to woodland areas.

There is scope within the town to use species which occur within these wooded areas i.e. oak, ash and beech, for new planting. As native trees, oak and ash are extremely valuable from an ecological viewpoint. In particular these native and longer-lived trees could be used for new developments where planting of birch and rowan, both relatively short-lived species, do not necessarily represent a good long-term investment.



**Figure 11. Stradbally Tree Groups map**





**Figure 12. Stradbally Level of Importance map**

### 3.3.7 Tallow (Figure 13 and Figure 14)

Seven kilometres south of Lismore is the town of Tallow, located on the Glenaboy River near where the stream joins the River Bride. Tallow is a town with relatively few trees; however new planting is in good condition and includes a high proportion of long-lived species such as oak and beech. Mature trees are confined to church property with the notable exception of two white poplars located on the Mill Road (**Photo 16**). Opportunities for tree

planting need to be created on the periphery of the town, away from the densely built up main street.

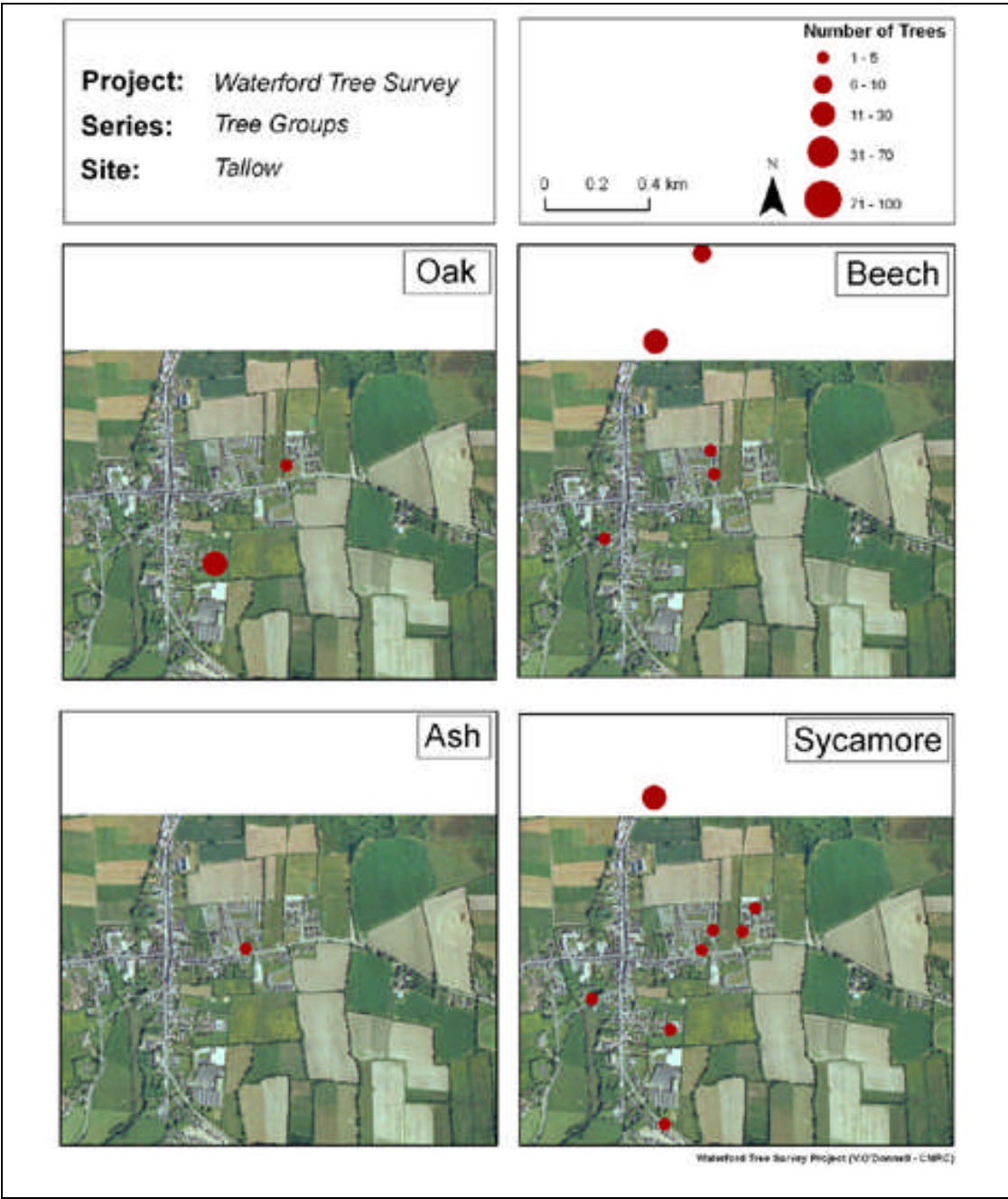
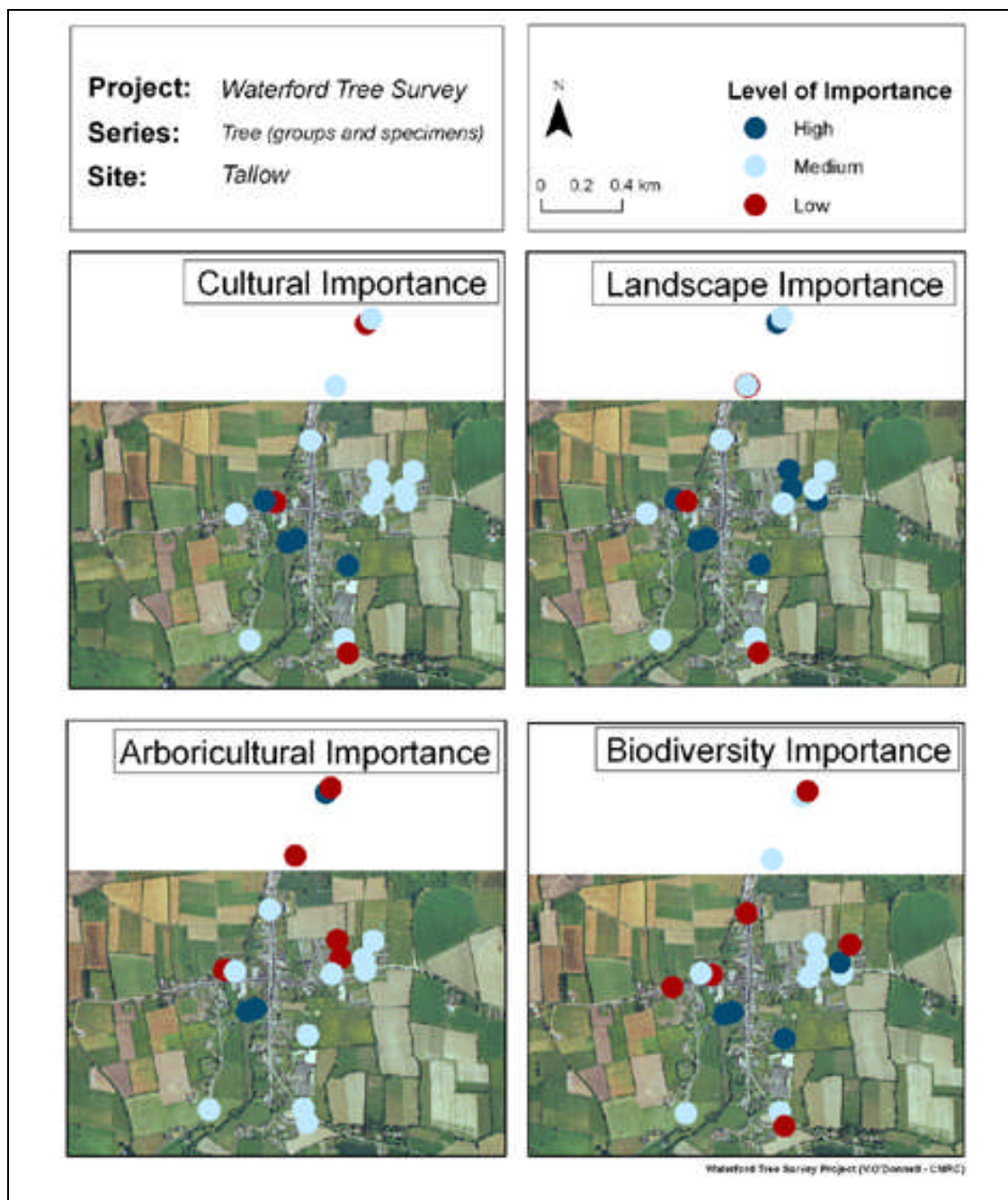


Figure 13. Tallow Tree Groups map





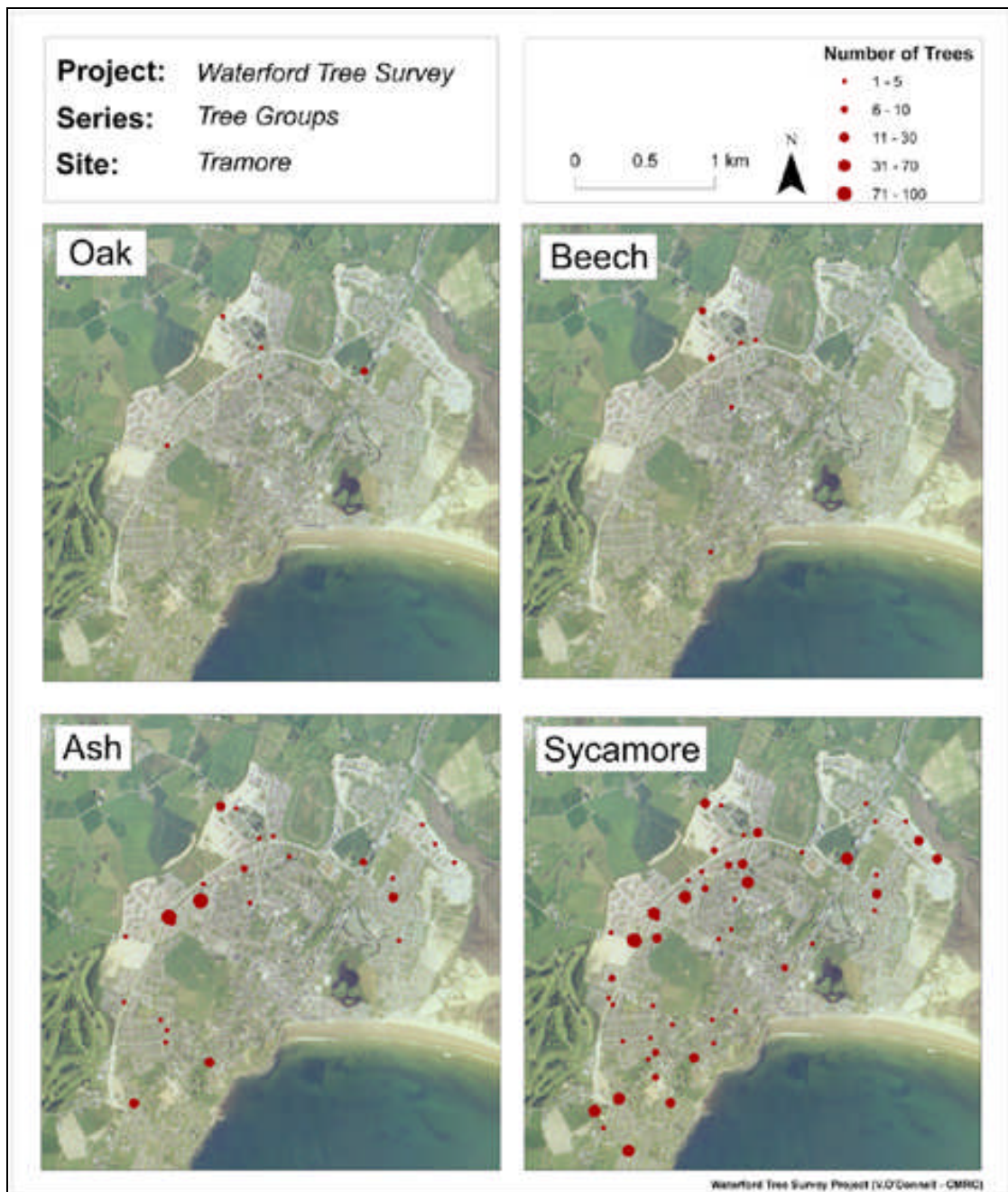
**Figure 14. Tallow Levels of Importance map**

### 3.3.8 Tramore (Figure 15 and Figure 16)

Situated overlooking Tramore Bay approximately 13 km south of Waterford City, the town of Tramore is one of Ireland's most popular seaside resorts. The town of Tramore is situated on an exposed coastal site with few established and mature trees. However expansion of the town, which includes new housing and a new road network, has created opportunities for new tree planting. The maintenance of recent tree planting is variable and the emphasis has been on ornamental, small-form tree species, such as cherry

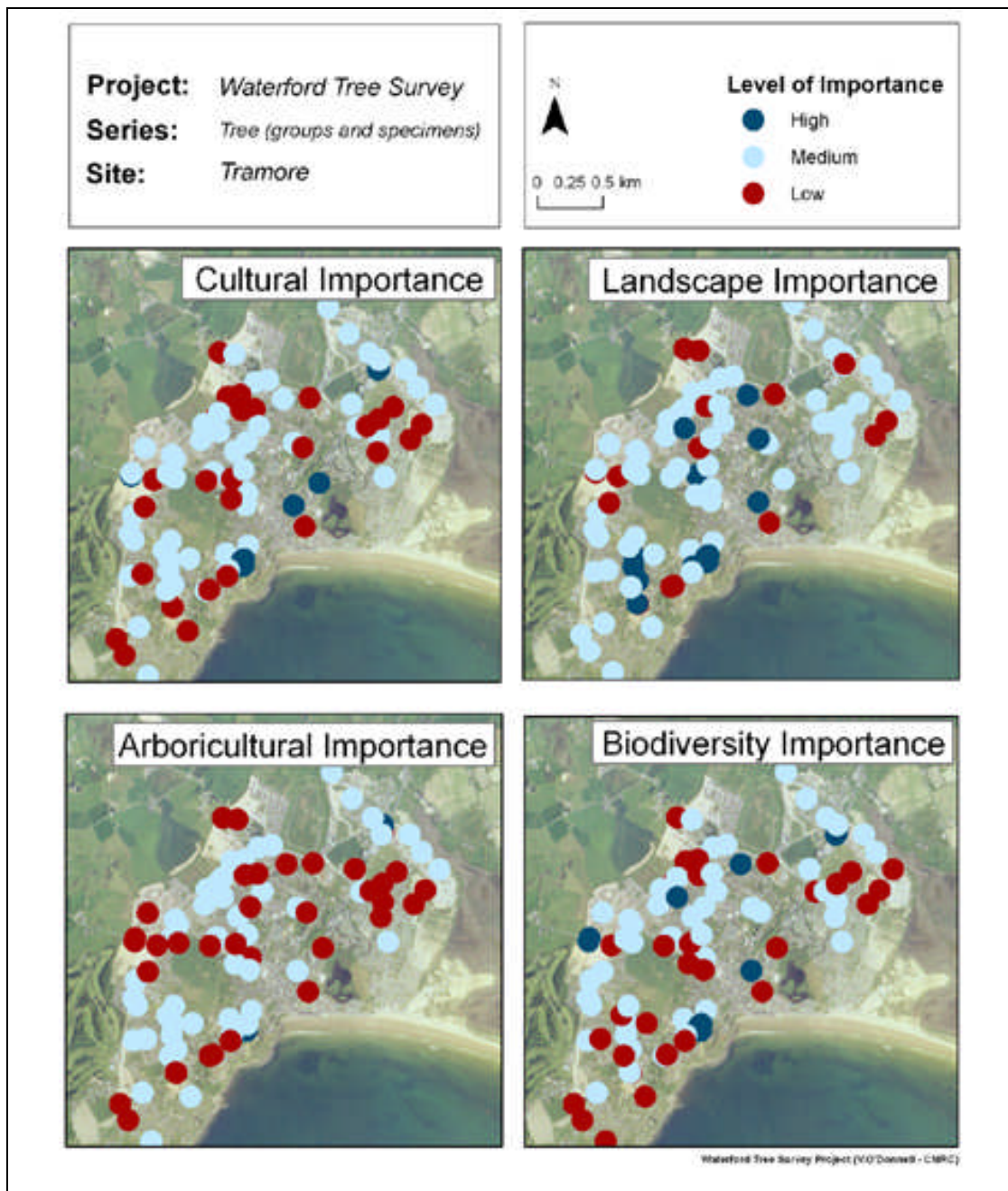
and whitebeam. Thus the opportunity to create amenity open spaces with longer term forest tree species has been missed. This type of planting would only be successful in a mixture with salt and wind tolerant trees such as Monterey cypress and evergreen oak and if transplant sized planting stock rather than standards were used. It should be noted that the planting of Turkey oak standards at Riverstown Industrial estate is considered inappropriate (**Photo 17**). These trees were planted as large standard and as such, are unable to thrive in the harsh exposed environment. They would have been better planted as small transplants and substituted with more salt tolerant species such as ash or evergreen oak.

Trees suitable for the Tramore Ring road i.e. trees with some tolerance of exposure including salt laden winds, would include ash, evergreen oak, sycamore and in less exposed areas oak. As mentioned previously trees are more likely to thrive if established from transplants and not standards. Poor species choice to date within Tramore appears to have led to the poor condition of trees (**Photo 18**). Lack of maintenance by developers also appears to be an issue.



**Figure 15. Tramore Tree Groups map**



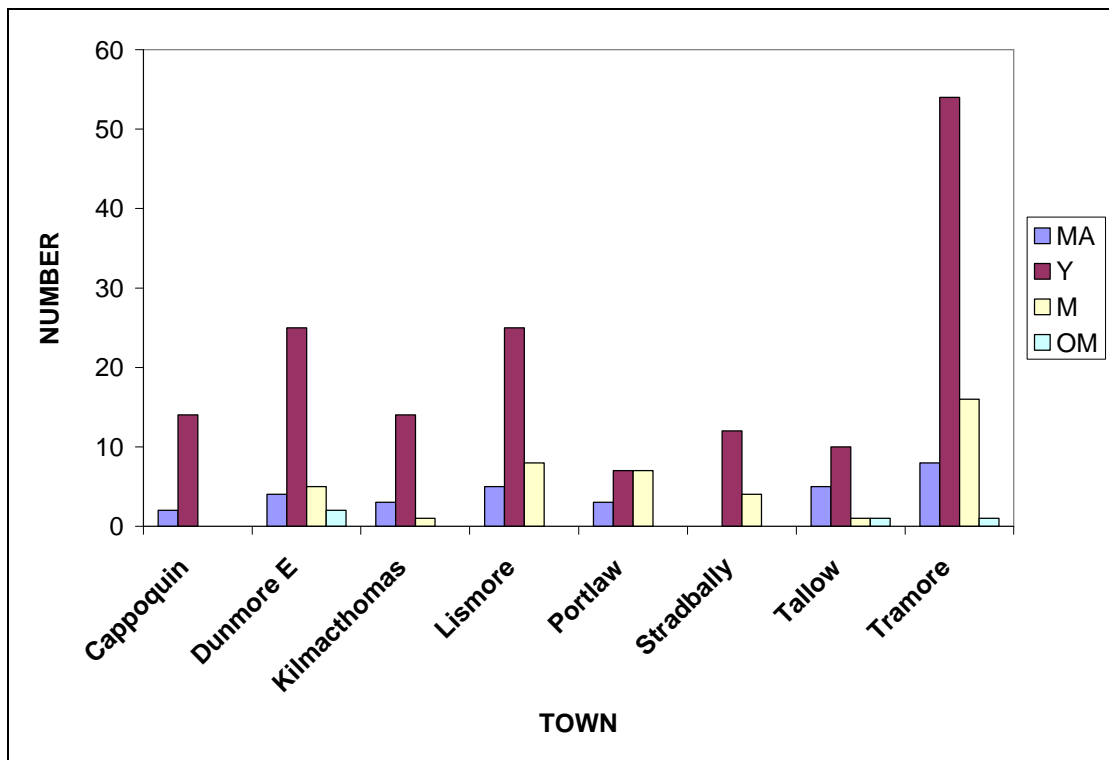


**Figure 16. Tramore Levels of Importance map**

### 3.4 Results overview

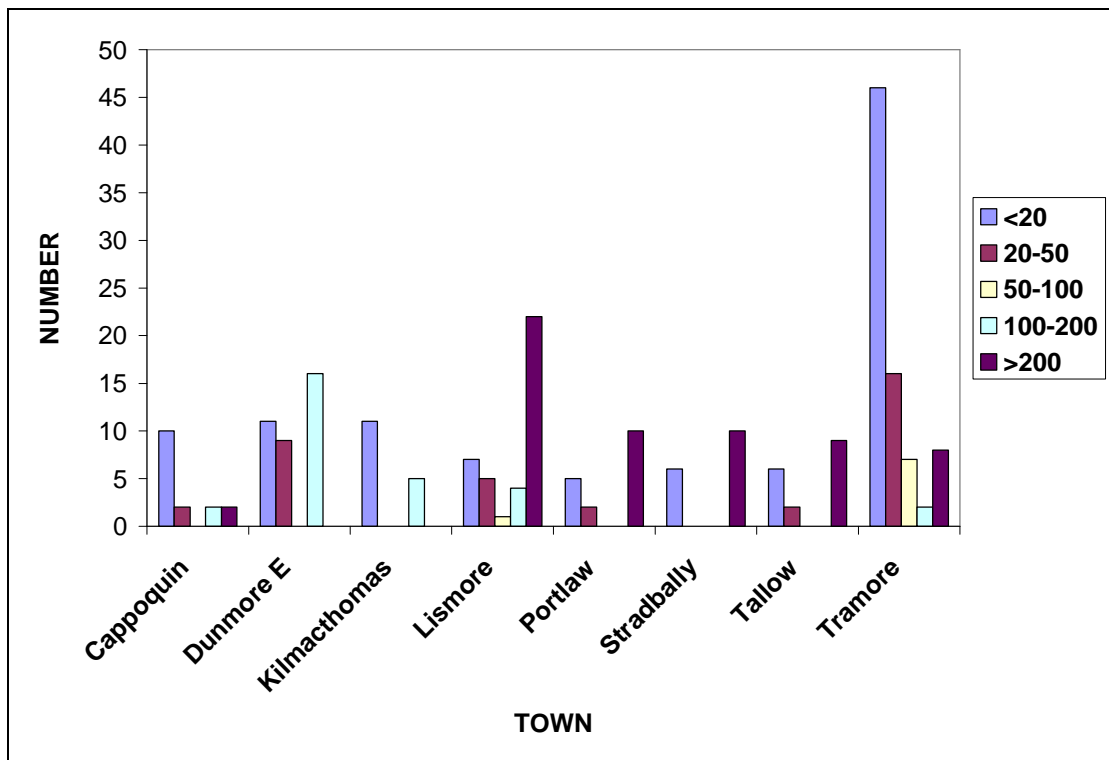
#### 3.4.1 Tree and street age

A large proportion of the trees surveyed were young trees (**Figure 17**). With the exception of Cappoquin, mature trees were recorded in most towns although in significantly smaller numbers.



**Figure 17. Tree age categories in each town. MA=middle aged; Y=young; M=Mature; OM=Over mature**

The tree age appears to reflect closely the street ages within the towns (**Figure 18**), particularly in Tramore where the majority of streets surveyed were less than 20 years old.

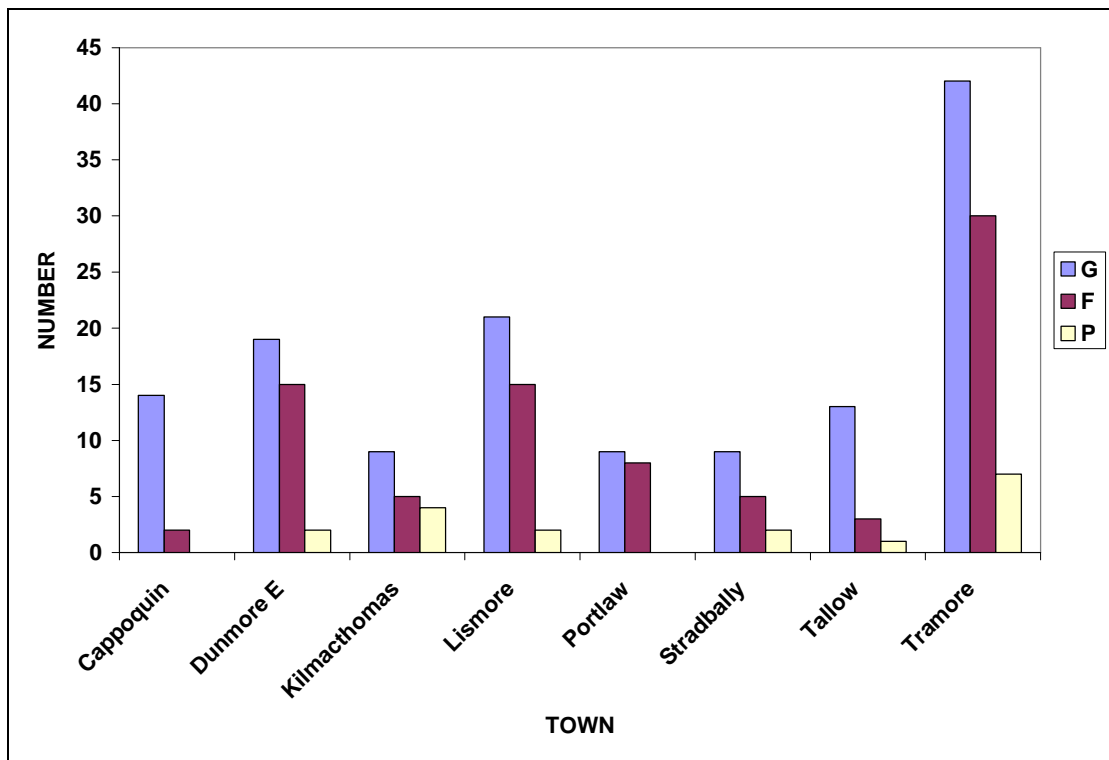


**Figure 18. Street age (years) categories in each town i.e. <20 years, 20-200 years and >200 years**

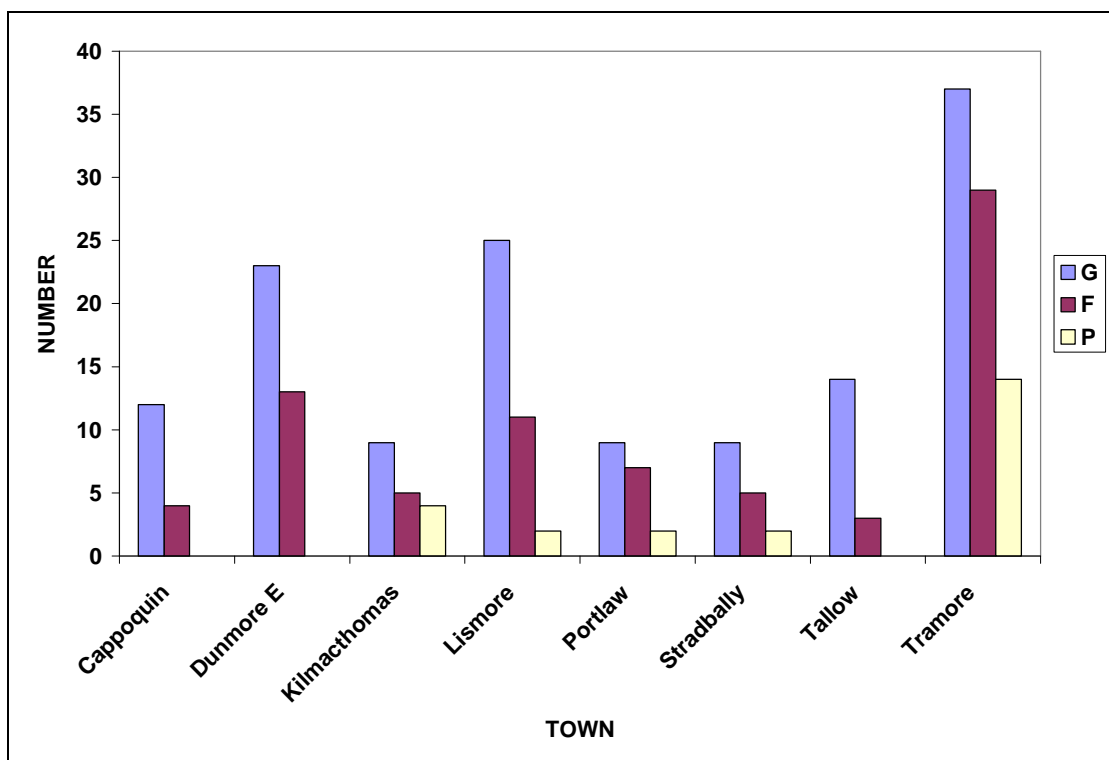
### 3.4.2 Condition

The structural condition of most trees surveyed was good (**Figure 19**). However a significant proportion of trees were classified as 'fair'. Trees which were in 'poor' condition were rare. The physical condition of trees was generally good (**Figure 20**). However within Tramore, a significant proportion of trees were in poor physical condition. This appears to be due to poor species choice.





**Figure 19. Structural condition of trees in each town. G=good; F=fair; P=poor**



**Figure 20. Physical condition of trees in each town. P=poor; F=fair; G=good**

3.4.3 Tree size

The average tree heights within the towns ranged from 5.75 m (Cappoquin) to 9.02 m (Lismore). However within each town there was large variation in tree heights (**Figure 21**). Average stem diameters ranged from 143.8 mm (Cappoquin) to 429.4 mm (Portlaw) (**Figure 22**).

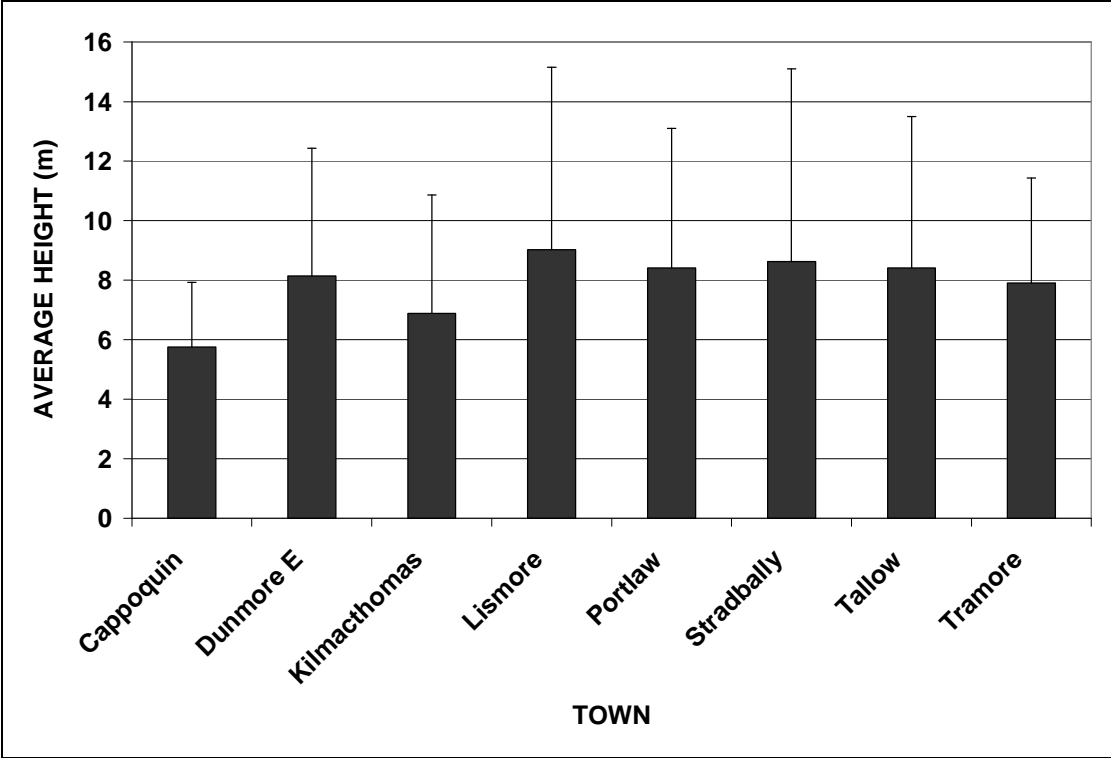
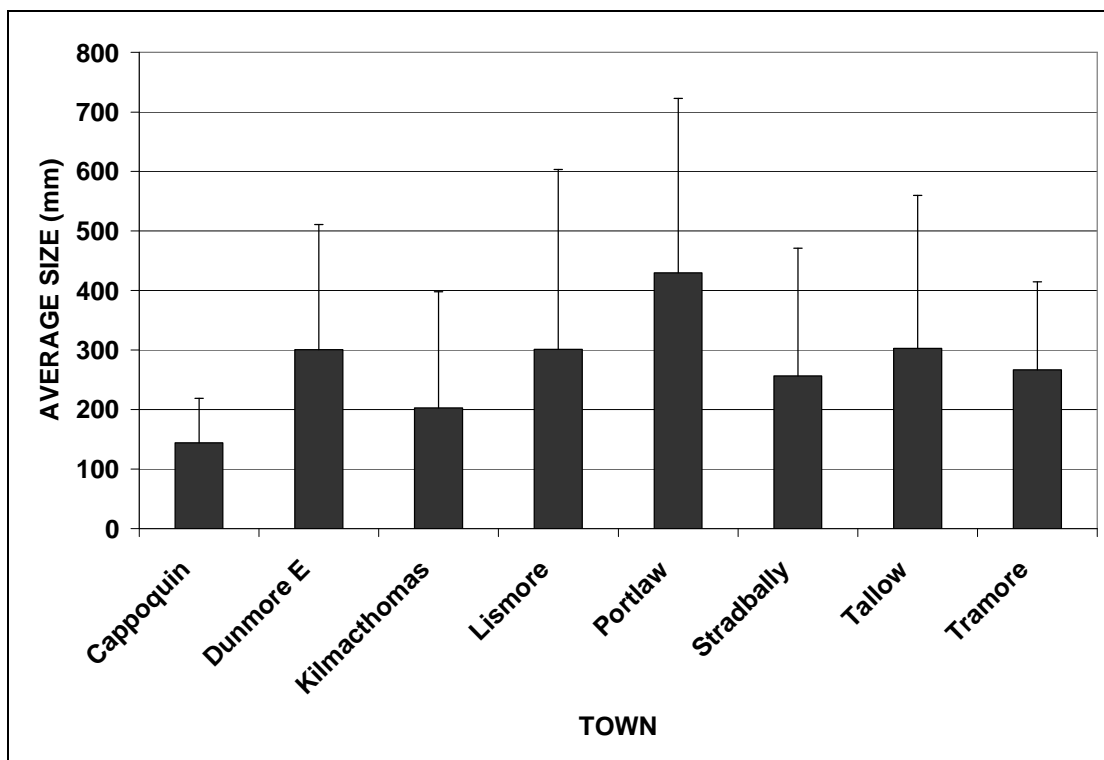


Figure 21. Average height (Mean +/- SD) of trees in each town



**Figure 22. Average stem diameter (Mean +/- SD) of trees in each town**

#### 4. Recommendations

The following recommendations should be implemented in all towns where possible:

4.1 Include a higher proportion of long-lived species preferably native in new planting schemes ensuring that sufficient space is designated within new developments. The proportion of smaller trees, particularly *Sorbus* sp, rowan and to a lesser extent whitebeam, should be reduced as these species rarely thrive in roadside planting.

4.2 Native species should be favoured, primarily for ecological reasons, but also to perpetuate existing landscapes e.g. Lismore.

4.3 Establish trees of local provenance using trees grown from local seed sources. At the very least, stock should be of Irish origin. This is of particular

relevance to oak, ash, hazel, sweet chestnut, beech, hawthorn, whitebeam and spindle.

4.4 Encourage the establishment of native understorey shrub species in conjunction with tree planting particularly holly, spindle, hazel and hawthorn.

4.5 Create opportunities for extensive woodland tree planting on the periphery of towns, particularly where existing development has left insufficient space for new planting e.g. Tallow and Cappoquin.

4.6 Manage mature and over-mature trees to enable their safe retention by using tree surgery including crown reduction and pollarding e.g. lime trees adjacent to Lismore cathedral.

4.7 Respect the woodland character/treescape of the existing towns by choosing appropriate species e.g. species tolerant of salt laden winds at Tramore and Dunmore East and traditional estate hardwoods at Lismore.

4.8 Use transplants (<1m height) instead of larger standards where possible and particularly where there are adequate environmental conditions. Transplants are more likely to survive the trauma of transplanting and are more cost effective.

4.9 Encourage the use of nut and fruit producing species including orchard establishment with local/regional varieties of apple and pear.

4.10 Encourage active involvement of schools/local communities by establishing living hedges, sculptures etc and using fruit and nut bearing species.

4.11 Incorporate existing trees/hedges into new development design as can be seen at parklands, Tramore and horse chestnut, Portlaw.

4.12 Undertake formative pruning on young trees to encourage good form and minimise safety hazards that develop from poor branching patterns, acute forks etc.

4.13 Enforce high standards of aftercares in tree planting on development sites.

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## Appendix 1. Survey codes and descriptions

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### Tree groups

Street function	Residential
	Commercial
	Industrial
	Church
	Amenity
	Agricultural

Street age	200+
	100-200
	50-100
	20-50
	<20

Tree format	Boulevard
	Group
	Random
	Hedgerow

Tree species		
Common name	Latin name	Code
Alder	<i>Alnus glutinosa</i>	Ald
Almond	<i>Prunus dulcis</i>	Alm
Ash	<i>Fraxinus excelsior</i>	As
Aspen	<i>Populus tremula</i>	Asp
Atlas cedar	<i>Cedrus atlantica</i>	CeAt
Balsam poplar	<i>Populus balsamifera</i>	BP
Bay	<i>Laurus nobilis</i>	By
Beech	<i>Fagus sylvatica</i>	Be
Birch	<i>Betula alba</i>	Bi
Black poplar	<i>Populus nigra</i>	BkP
Black walnut	<i>Juglans regia</i>	BWa
Box	<i>Buxus sempervirens</i>	Bx
Catalpa	<i>Cedrus deodara</i>	Cat
Cedar	<i>Juniperus sp</i>	Ce
Cedar of Lebanon	<i>Cedrus libani</i>	CeL
Cherry	<i>Prunus sp</i>	Ch
Copper beech	<i>Fagus sylvatica</i>	BeC
Cordyline	<i>Cordyline indivisa</i>	Car
Corsican pine	<i>Pinus nigra</i>	CrP

Tree species		
Common name	Latin name	Code
Corydalis	<i>Corydalis cava</i>	Cy
Douglas fir	<i>Pseudotsuga menziesii.</i>	
Elm	<i>Ulmus sp</i>	El
Eucalyptus	<i>Eucalyptus sp</i>	Eu
Evergreen oak	<i>Quercus sp</i>	OE <sub>v</sub>
Field maple	<i>Acer campestre</i>	FM
Grand fir	<i>Abies grandis</i>	FiG
Hawthorn	<i>Crataegus oxyacantha</i>	Ha
Holly	<i>Ilex aquifolium</i>	Hol
Horn Beam	<i>Carpinus betulus</i>	HB
Horse chestnut	<i>Aesculus hippocastanum</i>	HC
Irish yew	<i>Taxus baccata</i>	Ylr
Laburnum	<i>Laburnum anagyroides</i>	Lb
Larch	<i>Larix decidua</i>	Lar
Lawson's Cypress	<i>Chamaecyparis lawsoniana</i>	LCs
Lime	<i>Tilia cordata</i>	Li
Lodgepole pine	<i>Pinus contorta</i>	LP
Magnolia	<i>Magnolia officinalis</i>	Mag
Maidenhair tree	<i>Ginkgo biloba</i>	Mai
Malus	<i>Malus domestica</i>	Mal
Monteroy Cypress	<i>Cupressus macrocarpa</i>	MCs
Noble Fir	<i>Abies procera</i>	FiN
Norway maple	<i>Acer sp</i>	NM
Norway spruce	<i>Picea abies</i>	NS
Oak	<i>Quercus rober</i>	Oa
Oriental plane	<i>Platanus sp</i>	OP
Plane	<i>Platanus sp</i>	Pla
Prunus	<i>Prunu sp</i>	Pr
Pyrus	<i>Pyrus sp</i>	Py
Red oak	<i>Quercus rubra</i>	OR <sub>e</sub>
Rowan	<i>Sorbus sp</i>	Rw
Scots pine	<i>Pinus sylvestris</i>	SP
Silver fir	<i>Abies alba</i>	SiF
Sitka spruce	<i>Picea sitchensis</i>	SS
Southern beech	<i>Nothofagus sp.</i>	SB
Stone pine	<i>Pinus pinea</i>	StP
Swamp cypress	<i>Taxodium distichum</i>	SCy
Sweet chestnut	<i>Castanea sativa</i>	SC
Sycamore	<i>Acer sp</i>	Ac
Turkey oak	<i>Quercus cerris</i>	OTu
Walnut	<i>Juglans regia</i>	Wa
Western red cedar	<i>Thuja plicata</i>	WRC
White poplar	<i>Populus alba</i>	WP
Whitebeam	<i>Sorbus rupicola</i>	WB
Willow	<i>Salix sp.</i>	Wi
Yew	<i>Taxus baccata</i>	Y

Age	Code
Young	Y
Middle aged	MA
Mature	M
Over mature	OM
Veteran	V

Importance		
Arboricultural	High	H
	Moderate	M
	Low	L
Landscape	High	H
	Moderate	M
	Low	L
Importance cultural	High	H
	Moderate	M
	Low	L
Biodiverstiy	High	H
	Moderate	M
	Low	L

Fossitt	
Relevant where groups of trees correspond to habitat categories (Fossitt 2000). WS2- Immature woodland WL2- Trees WL1- Hedgerows WD5- Scattered trees and parkland WD1- Mixed broadleaved woodland	

### **Individual Trees**

ID	GIS
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Street name	As per OS maps
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Species	As per groups
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Location	Verge
	Park
	Hedgerow
	Woodland
	Riparian woodland



	Graveyard
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Crown diameter	m
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Stem diameter	mm
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Tree size	Small	S
	Medium	M
	Large	L
	Very large	VL
Age	Young	Y
	Middle aged	MA
	Mature	M
	Over mature	OM
	Veteran	V

#### Condition

Physical	Good	G
	Fair	F
	Poor	P
	Dead	D
Structural	Excellent	E
	Good	G
	Fair	F
	Poor	P
	Very poor	VP
ERC	<10 10-20 20-40 >40	
Category grading BS 5857:2005	R	
	A	
	B	
	C	

#### Importance

Arboricultural	High	H
	Moderate	M
	Low	L
Landscape	High	H
	Moderate	M
	Low	L
Cultural	High	H
	Moderate	M
	Low	L

Biodiversity	High	H
	Moderate	M
	Low	L
Category importance	International	I
	National	N
	Regional	R
	Local High	LH
	Local Moderate	LM
	Low	L

## Context

Importance positioning	None	N
	Little	L
	Some	S
Presence of trees	Considerable	C
	Woodland	W
	Many	M
	Some	S
	Few	F
	None	N
Relation to setting	Unsuitable	U
	Moderately unsuitable	MS
	Very unsuitable	VS
Physical form	Poor	P
	Fair	F
	Good	G
Biodiversity	Bats	
	Bird	
	Habitat	

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## Appendix 2. Photographs

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**Photo 1. Example of new planting with poor maintenance in new housing development**



**Photo 2. Example of poor species choice on roadside planting**





**Photo 3. Example of 1960-1990's planting**



**Photo 4. Hedgerow incorporated into new development**





**Photo 5. Cappoquin; Interesting planting along river banks including swamp cypress**



**Photo 6. Dunmore East; Conifer planting including stone pine in the Hermitage**



**Photo 7. Dunmore East; Appropriate planting i.e. Monterey pine**



**Photo 8. Dunmore East; Good example of amenity planting including evergreen oak**





**Photo 9. Kilmacthomas Hillside; Few trees and generally in poor condition**



**Photo 10. Kilmacthomas; Poor species choice in new roadside planting**



**Photo 11. Lismore; Rowan trees in poor form and health on roadside location**





**Photo 12. Lismore; Mature trees near Lismore Castle**



**Photo 13. Lismore; Veteran trees lime trees on approach to Lismore Cathedral**





**Photo 14. Lismore; Good example of mature trees near Lismore Cathedral**



**Photo 15. Stradbally; Town square where five specimen trees including black walnut and beech were recorded**





**Photo 16. Tallow; Mill road notable planting**



**Photo 17. Tramore; examples of large standards poorly established in Riverstown Industrial Estate**



**Photo 18. Tramore; Domestic apple tree in poor condition adjacent to roadside**