

ALTERFOR 4th cross-project meeting Padova, 3-5 April 2019

TRAVELLAB SESSION (5 April 2019)

A short general note on ALTERFOR case study area (CSA) for Italy and the Lowland Forest Association (*Associazione Forestale di Pianura*, AFP)

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The ALTERFOR case study area (CSA) for Italy is located in the Eastern part of Veneto (North-Eastern Italy, figure A.1), North-East of Venice (figure A.2). The overall area at large includes eight different municipalities within the Province of Venice, covering a total area of about 69,000 ha and hosting about 140,300 inhabitants (Istat, 2011a and 2011b)¹. It includes very fertile and productive farmlands where cereals (corn and maize) and vegetables are grown. The area is close to Venice and other touristic places (towns and beaches) along the Northern Adriatic Sea, and around 3 million tourists visit it every summer.

More in detail, the case-study area stretches over 315.4 ha, 291 ha of which are covered by forests (92.3% of the total case study area) (figure A.3). Forests mainly consist of (i) semi-natural lowland forest remnants (oak-hornbeam forests) that in some cases have been integrated with newly/recently planted forests (afforestation and reforestation areas, max 20 years old), (ii) 60-70 years old planted forests (mostly planted pine forests, mixing different pine-species, and locally mixed with holm oak forests) and (iii) relatively small patches of semi-natural riverine forests. All forests included within the CSA are public owned (mostly by local Municipalities), while management tasks are carried out through various forms: direct management by the municipalities, management agreement with private companies, rent to privates, management agreement with the local Forest Service etc. Management activities are coordinated by a public-private Association, called Lowland Forest Association (*Associazione Forestale di Pianura*, AFP²) that helps dialogue among multiple actors and supports forest owners raising funds for improving their forests and the benefits they provide to local communities. The Association attracts both public (e.g. through the Rural Development Program) and private funds, for example by giving investors the possibility to invest in local forests under different conditions and via different mechanisms (afforestation, off-set payments, etc.). AFP also provides technical support and cooperates with local universities/research bodies, technicians/experts (e.g. foresters, agronomists, architects, etc.), environmental non-government organisations (NGO) and local (and not) private companies.

Due to proximity to urban areas and the large number of visitors, as well as to the specific ecological (and socio-economic) features of local forest resources (forest remnants, new plantations, urban/peri-urban areas, etc.) management operations are not standardised and mostly consist of selective harvesting oriented to facilitate the evolution towards more natural and stable forest ecosystems. This also leaves

¹ Istat (2011a). La superficie dei comuni, delle province e delle regioni italiane. Dati al 9 ottobre 2011. www.istat.it/it/files/2015/04/Superfici-delle-unità-amministrative-Testo-integrale.pdf, last access: 23.03.2019; Istat (2011b). Censimento della popolazione e delle abitazioni. <http://dati-censimentopopolazione.istat.it/Index.aspx>, last access: 23.03.2019.

² www.forestedipianura.it (Italian only)

managers the opportunity to decide future operations based on the progress of development processes/dynamics and to decide the type and intensity of management operations according to specific conditions. From a purely technical point of view there is not a fixed management model to replicate and much is left to case-by-case decisions made by the forest manager(s) within the framework of a broader strategy set-up through the management plan (2015-2025), and based on coordination with relevant stakeholders. In the short to medium term, selective systems appear as the only viable forest management solutions. Nonetheless it is worthwhile underlining that new agreements and arrangements (both formal and informal) and networking/cooperation among different actors are part of these new management models and likely represent the most relevant and challenging component of future decision making for the management and development of the area.

AFP forests are certified according to the Forest Stewardship Council® (FSC) standards since 2017. Certification is organised as a group-certification, with AFP belonging to a larger group managed and coordinated by a private company, Waldplus. In February 2019 Waldplus (and AFP forests within it) has been the first forest manager and FSC certificate holder worldwide to get a Forest Stewardship Council ecosystems services certification fulfilling all five environmental components that make up these services (species conservation, water quantity and quality improvement, increase in soil nutrients, increase of carbon stock and improvement of recreational services)³.

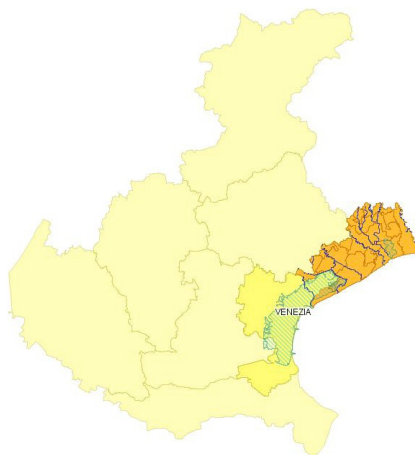
It is important to stress that AFP is not limited to the CSA: as a dynamic and innovative organisation it keeps growing and -since the starting of ALTERFOR project- it has expanded to include new forest areas in Veneto (e.g. Cessalto oak hornbeam relict forest) and outside Veneto (Figure B). As for the latter case, *Bosco Sacile* (Friuli Venezia Giulia), an example of privately owned oak hornbeam relict forest, will be visited during the Travellab session. Additional AFP forests outside Veneto include the Regional Oglio Sud Park (Cremona, Lombardy). AFP currently includes 16 members -10 public and 6 private entities- and manages an overall forest area of about 500 ha.

Figure A – Overview of the ALTERFOR case study area (CSA)

A1. Veneto region within Italy

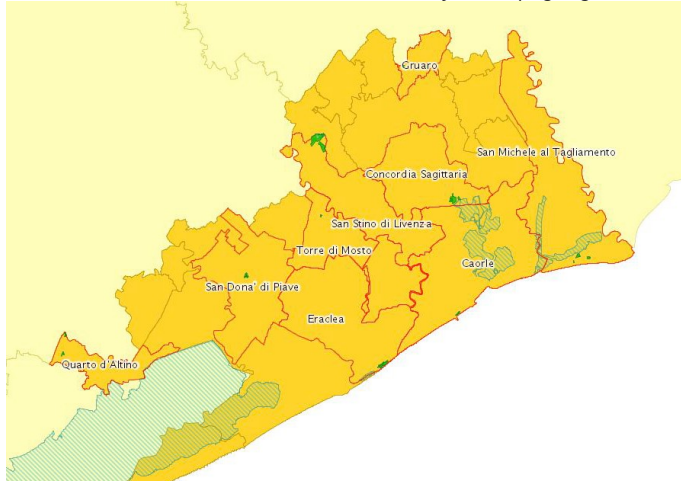


A2. Case study area within Veneto (highlighted in orange)



³ <https://ic.fsc.org/en/news-updates/id/2280>

A3. Forests included within the case study area (highlighted in solid green)



Source: Paneghel, 2014⁴.

Figure B – AFP forest network beyond the ALTERFOR case study area (CSA)



Sites that will be visited during the Travellab session:

1. Bosco Fellini – San Donà di Piave (VE)
2. Bosco Sacile – Carlino (UD)
3. Bosco del Sagittario – Bibione, San Michele al Tagliamento (VE)
4. Faro di Bibione/Bibione lighthouse forest – Bibione, San Michele al Tagliamento (VE)

⁴ Paneghel, M., 2014. The identification of the High Conservation Values as a requirement for the FSC certification process: the Associazione Forestale del Veneto Orientale case study (NE-Italy). BSc thesis in Forestry and Environmental Technologies, University of Padova.

1. Bosco Fellini (San Donà di Piave - VE)

Bosco Fellini is a urban forest area stretching over about 12 hectares (ha) within the Municipality of San Donà di Piave (Venice) (figure 1.1), close to the local industrial area. It has been planted starting from 2001 and consists of an afforested area *sensu stricto* (about 7ha) and complementary areas, including meadows, pic-nic and playground areas, bike and walking paths, etc. as well as an area used for education purposes and hosting multiple tree-species like walnut (*Juglans regia*), black locust (*Robinia pseudoacacia*), sycamore (*Platanus orientalis*), birch (*Betula pendula*), Scot pine (*Pinus sylvestris*) etc. and a small fruit-orchard (figure 1.2).

The afforested area is commonly classified as an oak-hornbeam forest (*Quercus robur* and *Carpinus betulus*) but it also includes (though in lower percentages) other broadleaves like ash (*Fraxinus angustifolia*), field maple (*Acer campestre*), elm (*Ulmus campestris*), linden (*Tilia* spp.), as well as brushes like hazel (*Coryllus avellana*), black elder (*Sambucus nigra*), Cornelian-cherry/dogwood (*Cornus mas*) etc. The lower parts of the forest area include some spots mainly hosting hydrophilic species like willow (*Salix* spp.), poplar (*Populus* spp.) and black alder (*Alnus glutinosa*). Thinning operations have been performed in 2014, especially on poplar trees and shrubs. Today most of the trees are about 10m tall, with willow (12-13m) and poplar (15m) trees being higher. As for the structure, the forest is substantially single-layered, however some stratification can be noticed, with a slightly dominant layer including poplar trees, followed by a lower one with ash, elm and willow and, finally, a third one hosting oaks and hornbeams.

Most of the edges are limited by tree rows of various poplar species, as well as other broadleaves like ash (*Fraxinus angustifolia*), white mulberry (*Morus alba*) and linden (*Tilia* spp.).

Dead trees and occasional windthrowns can be found within the forest area, and natural regeneration (mostly poplar and ash, as well as brushes) is limited to naturally or artificially cleared areas.

In 2017 an additional 3 ha have been afforested thanks to the support of Alì, a local Retail Company⁵. The newly afforested area includes some 3,300 trees, mostly consisting of typical local lowland species, like oak, hornbeam, elm, linden, willow, poplar and alder.

The area in a nutshell:

Site	Via Revine, 30027 San Donà di Piave VE - Italy JHPW+75 San Donà di Piave, VE
Owner	Municipality of San Donà di Piave
Area (ha)	12.66 + 3ha
Tenure	Managed by a private organization via contract/agreement
Main forest function/service	Recreation

Stakeholders/people we will meet:

- Mr. Andrea Cereser (Mayor of San Donà di Piave)
- Mr. Christian Bonetto (*Consorzio di Bonifica* – Land Reclamation Consortium)
- Ms. Raffaella Bendi (Alì - private investor)

⁵ www.alisupermercati.it/news/bosco-fellini-la-prima-foresta-1519

Figure 1.1 – Bosco Fellini (location map)

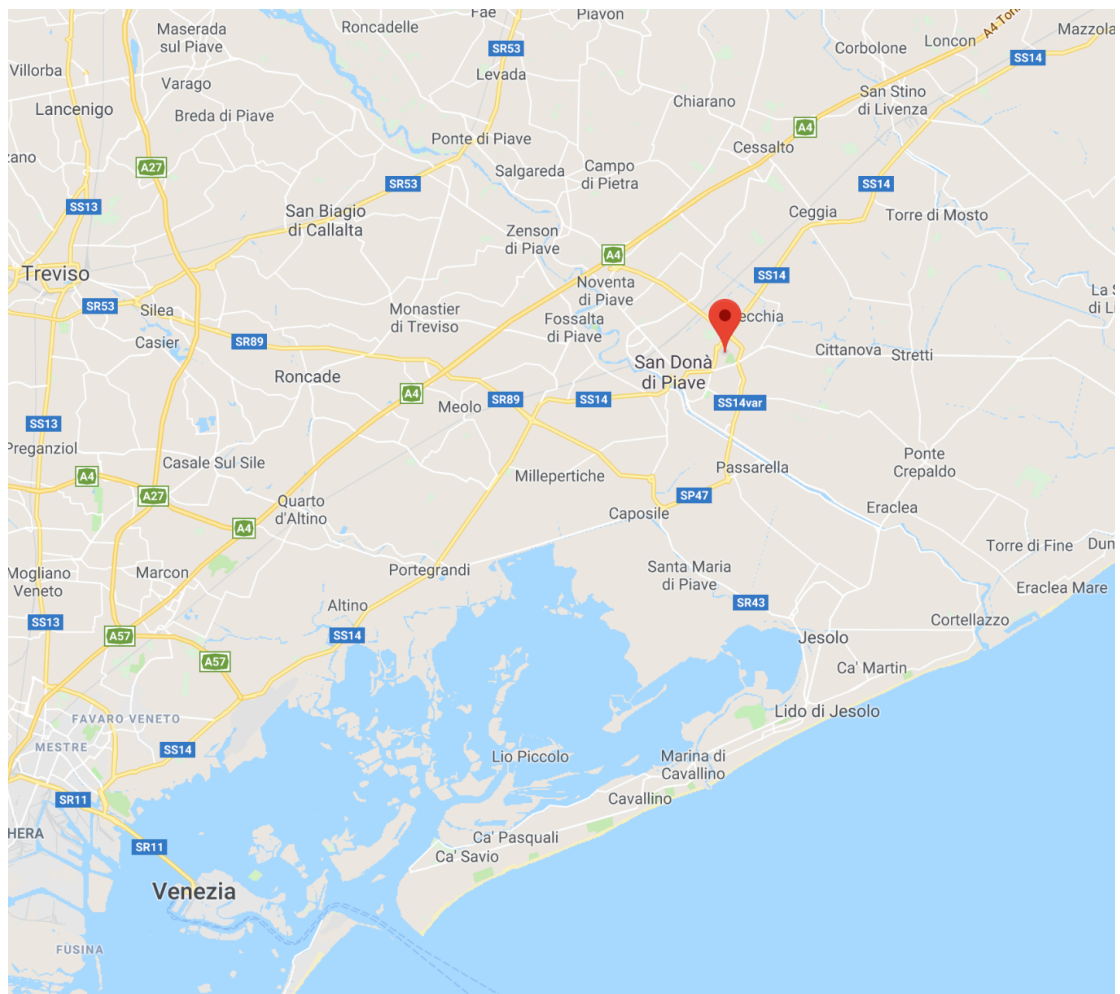
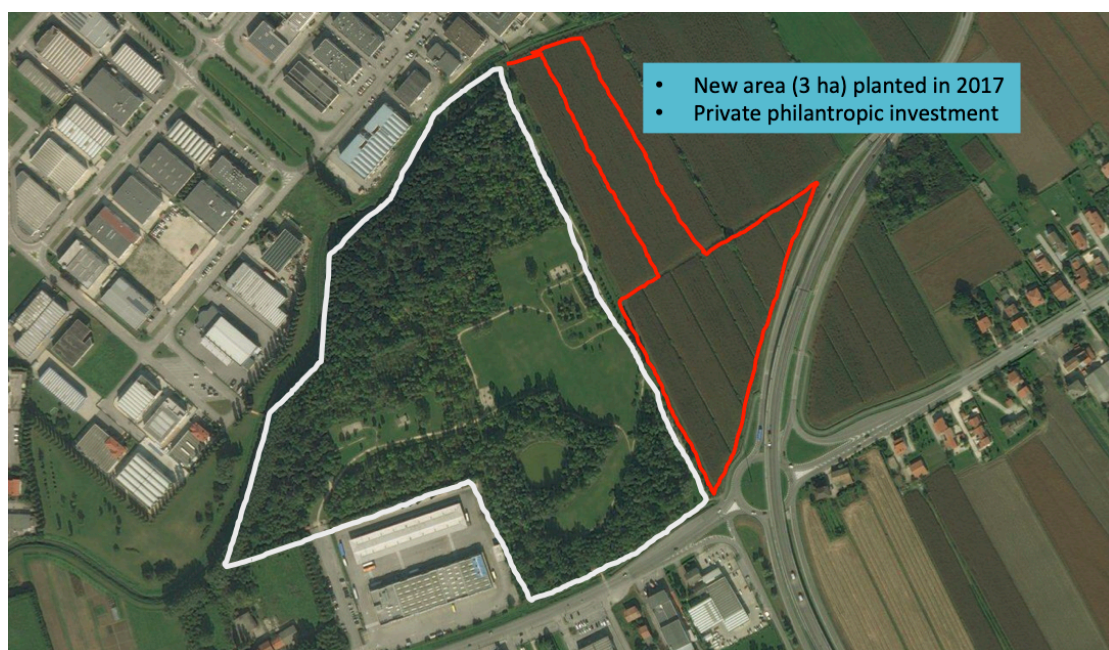


Figure 1.2 – Bosco Fellini (aerial view)



2. Bosco Sacile (Carlino - UD)

Bosco Sacile is located within the municipality of Carlino (UD) (figure 2.1) and stretches over some 70 ha as a part of a broader forest covering about 140 ha (figure 2.2). It is a prominent example of oak-hornbeam forest and is actually one of the largest relict oak-hornbeam forests once covering the lowland areas of Veneto and Friuli Venezia Giulia, as well as large portions of the whole Po Valley. The forest includes oak (*Quercus robur*, *Q. petraea* and *Q. cerris*) and hornbeam (*Carpinus betulus*) as main species, however ash (*Fraxinus angustifolia*) is also present.

Oak-hornbeam forests are typically managed according to a “coppice with standards” management model, where the hornbeam trees are coppiced (rotation period: 22-25 years) and oak and ash trees are managed as high forests (rotation period: 80-100 years). According to data available from the existing literature, these forests should be characterised by a growing stock ranging between 150 and 250 m³/ha (Dal Favero *et al.*, 2008)⁶. In the case of *Bosco Sacile*, however, past management practices have heavily affected forest productivity and lead to forest degradation, including reducing accessibility over more than 60% of the area as a consequence of missing post-harvesting management that limited natural regeneration and favoured the spreading of blackberry brushes. Such management practices have resulted in natural regeneration being slowed down. Moreover top quality trees have been removed across more than 70% of the area, just leaving lower value trees. The forest enterprise responsible for past management activities has been persecuted for environmental damages by the local forest corps.

The whole area belongs to the “Bosco Sacile” Special Protection Area (SPA) (IT3320035M) falling within the Europe-wide Natura 200 protection network. In particular reference is made to habitat 91L0 Illyrian oak-hornbeam forests (*Erythronio-Carpinion*).

In 2018 the area has been acquired by a new private owner (AFP member) and new management models are currently being developed, with special emphasis on biodiversity and nature value conservation, but also management practices aiming to facilitate the production of non-wood forests products, in particular truffles.

The area in a nutshell:

Site	Via Marano, 33050 Carlino UD - Italy Q5WJ+RG Carlino, UD
Owner	Private owner
Area (ha)	70.2 ha (total area: 140 ha)
Tenure	Private owner
Main forest function/service	Potentially: Wood, Non-wood forest products, biodiversity conservation and cultural services

Stakeholders/people we will meet:

- Mr. Alessandro Arnosti (private owner)
- Prof. Tommaso Sitzia (ecologist, Natura2000, biodiversity conservation and forest management expert)
- Dr. Enrico Vidale (wild forest products expert)

⁶ Del Favero *et al.* (2008) – La vegetazione forestale e la selvicoltura nella Regione Friuli Venezia-Giulia. Regione Autonoma Friuli Venezia Giulia. Available online: www.regione.fvg.it/rafvfg/export/sites/default/RAFVG/economia-imprese/agricoltura-foreste/foreste/allegati/Del_Favero_-_La_vegetazione_forestale_e_la_selvicoltura_in_FVG.pdf

Figure 2.1 – Bosco Sacile (location map)

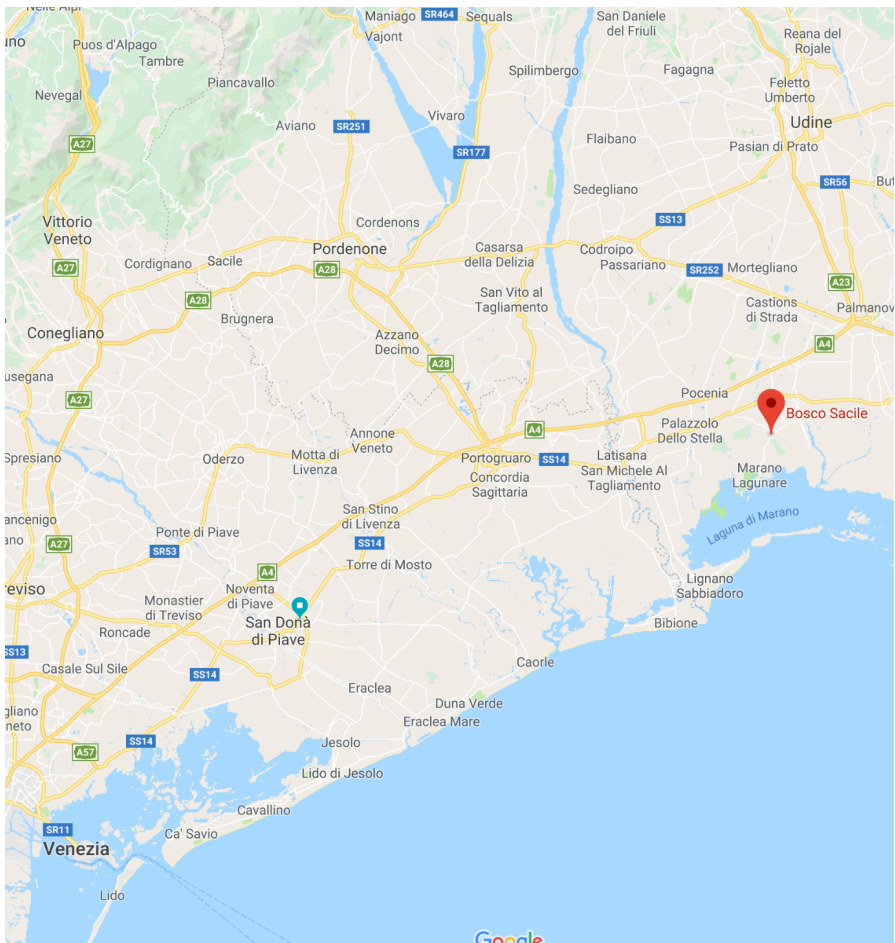


Figure 2.2 – Bosco Sacile (aerial view)



3. Bosco del Sagittario (Bibione, San Michele al Tagliamento - VE)

Bosco del Sagittario is located in Bibione area, within the municipality of San Michele al Tagliamento (VE) (figure 3.1). It covers an area of about 8 ha, and is located within a urban context, close to a residential area and an amusement-park (figure 3.2). In 2017 the forest has been improved through planting activities (about 4,500 trees) with the support of funds provided by a private company operating in the energy sector. Planting activities have been performed as forest improvement and carbon off-set initiatives within the framework of a broader project coordinated by AzzeroCO₂⁷.

Reforestation activities made use of local species typically found in holm oak (*Quercus ilex*) forests, i.e. a rare forest type that in the past was spread along the Northern Adriatic shore/coast and has been heavily affected by urban development, conversion to farmland and reforestation activities with pine species (*Pinus pinea* and *Pinus pinaster*). Tree species used for afforestation include: holm oak, stone pine (*Pinus pinea*), silverleaf poplar (*Populus alba*), elm (*Ulmus campestris*) and ash (*Fraxinus excelsior*).

The area is mainly managed for the provision of cultural (recreation) and regulating services (biodiversity conservation via improved ecological connections), but at the same time it is expected to fix some 6,700 tonnes CO₂ and to potentially provide non-wood forest products, namely truffles, because 10% of planted trees have been mycorrhized at the nursery stage, before planting.

The area in a nutshell:

Site	Via del Sagittario, 30020 San Michele al Tagliamento (VE) - Italy J2RX+JF Bibione, San Michele al Tagliamento VE
Owner	Municipality of San Michele al Tagliamento
Area (ha)	8 ha
Tenure	Municipality of San Michele al Tagliamento
Main forest function/service	Carbon sequestration, recreation (urban population and tourists), ecological connection and (potentially) non-wood forest products (truffles)

Stakeholders/people we will meet:

- Pasqualino Codognotto (Mayor of San Michele al Tagliamento)
- Elena Piazza (AzzeroCO₂)
- Ilaria Dalla Vecchia (FSC-Italy)

⁷ www.azzeroco2.it/wordpress/wp-content/uploads/2017/12/EON_dossier2017-web.pdf. AzzeroCO₂ is a private company fully owned by the Italian environmental NGO Legambiente.

Figure 3.1 – Bosco del Sagittario (location map)

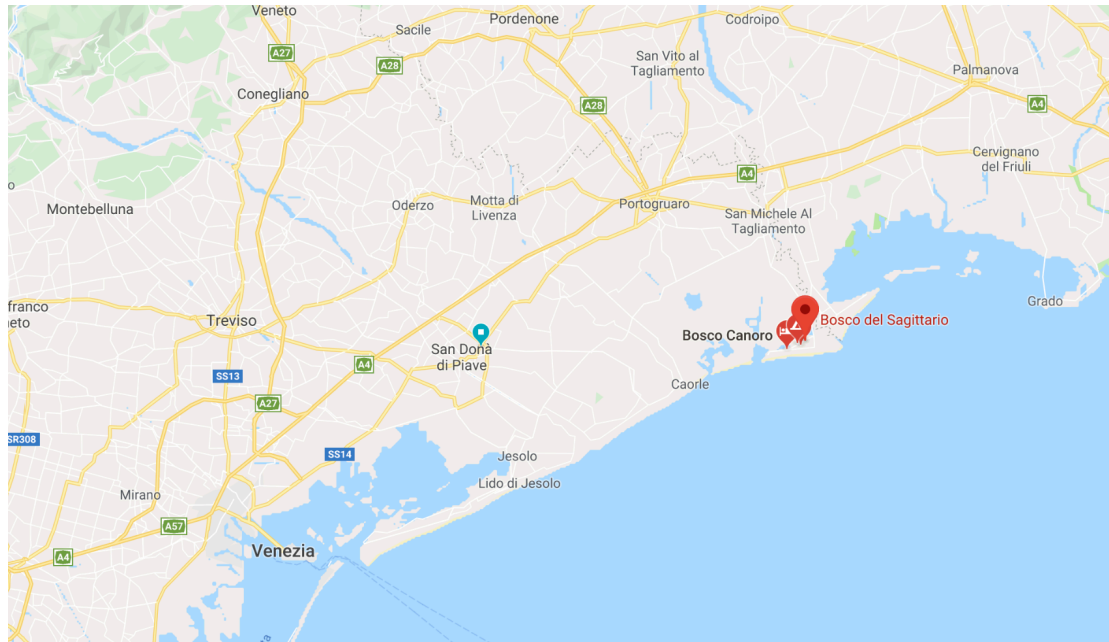


Figure 3.2 – Bosco del Sagittario (aerial view)



4. *Faro di Bibione*/Bibione lighthouse (Bibione, San Michele al Tagliamento - VE)

The forest area located close to the Bibione lighthouse, within the municipality of San Michele al Tagliamento (VE) (figure 3.1), is a good example of coastal forest for the ALTERFOR case-study area.

The area hosts a variety of valuable environments and habitats, including sand dunes and wetlands, while the forest mostly consists of a mixture of patches dominated by stone pine (*Pinus pinea*) trees and patches hosting an unusual mix of stone pine and black pine (*Pinus nigra*) trees. The black pine in coastal woods between the mouth of the Tagliamento river (see Figure 4.2) and the lagoon of Caorle (south of this area) represents a very important element from a naturalistic point of view. Some authors argued that the black pine have descended from the Illyrian Mountains, while according to some others this species was spread in the area thanks to seeds transportation by the river from the black pine forests found in the Carnic Alps. This is normally referred to as 'dealpinizzazione' of a species that is usually found in the mountains. Following natural dynamics, in the past the black pine occupied less mature/evolved soils as the shoreline was advancing, whereas on more mature soils the pine forest was replaced by holm oak forests. Some 50 to 80 years ago, however, different pine species, like stone pine (*Pinus pinea*) and maritime pine (*Pinus pinaster*), have been artificially introduced via reforestation activities, mainly at the expense of both holm oak and black pine forests.

Under pine trees, the understory is rich in different species, including (but not limited to) wild privet (*Ligustrum vulgare*), hawthorn (*Crataegus* spp.), honeysuckle (*Lonicera periclymenum*) etc.

The area fully belongs to the "Foce del Tagliamento" Special Protection Area (SPA) (IT3250040) falling within the Europe-wide Natura 200 protection network. In particular reference is made to habitat 9340 *Quercus ilex* and *Quercus rotundifolia* forests as well as several other non-forest habitats. The area also belongs to the larger "Laguna di Caorle - Foce del Tagliamento" Special Area of Conservation (IT3250033).

Due to the variety of habitats the area has high natural value and is largely used for hiking, bike-riding, and other recreational activities (also due to its proximity to beaches), including nature photography and bird-watching. At the same time some experimental management activities have been performed in the past to favour forest re-naturalization and, at the same time, supporting truffle production.

The area in a nutshell:

Site	30020 San Michele al Tagliamento (VE) - Italy J3PX+G2 Bibione, San Michele al Tagliamento VE
Owner	Municipality of San Michele al Tagliamento
Area (ha)	280 ha
Tenure	Municipality of San Michele al Tagliamento
Main forest function/service	Carbon sequestration, recreation (urban population and tourists), ecological connection and (potentially) non-wood forest products (truffles)

Stakeholders/people we will meet:

- Stefano Pellizon (AFP President)
- Dr. Enrico Vidale (wild forest products expert)

Figure 4.1 – *Faro di Bibione/Bibione* lighthouse (location map)

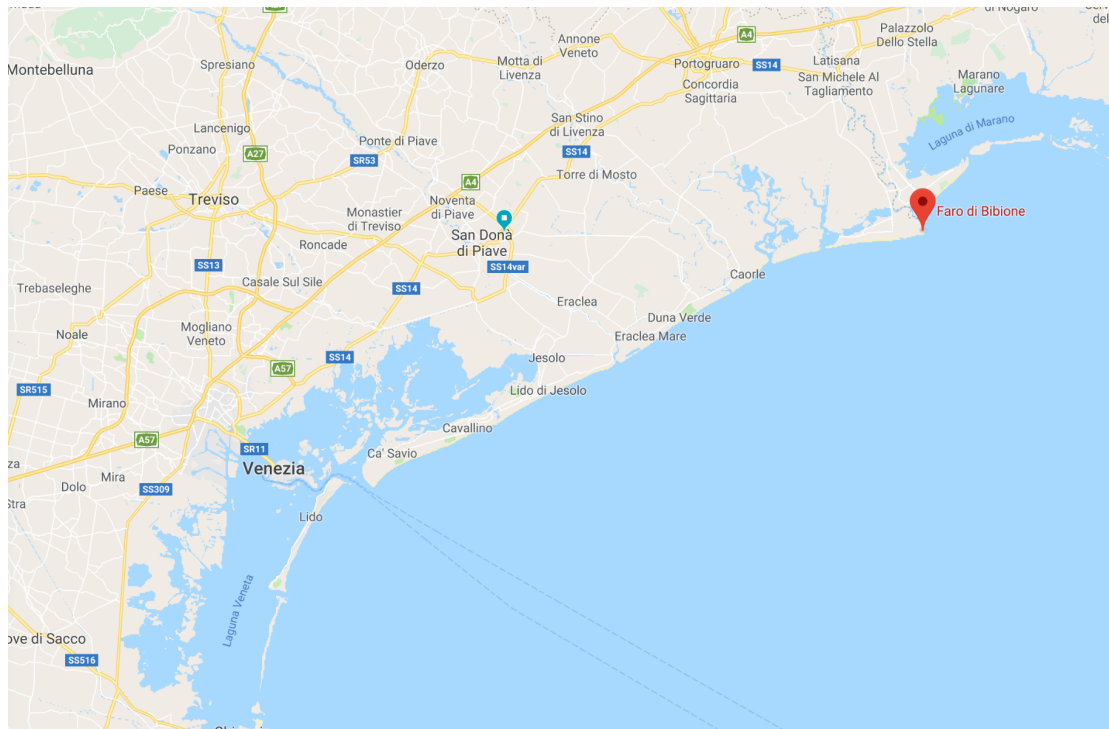


Figure 4.2 – *Faro di Bibione/Bibione* lighthouse (aerial view)

