

MUSEUMS SPECIAL FOR ALL – MUSEO DELLE VALLI

1) THE ECOMUSEUM OF ARGENTA

- Definition

The Ecomuseum is a covenant by which a community takes care of its territory. It is a process that requires the participation of citizens in decisions concerning local and sustainable development: therefore, it does not only consist of collections but it also goes beyond the walls and exhibits of the museum itself in order to extend to the living territory, involving the local population and its resources.



Video: *L'idea di Ecomuseo* (The Ecomuseum concept) - Nerina Baldi and Kenneth Hudson.

- Three Museums and Oasis of Val Campotto

In addition to the Museo delle Valli and its valleys, the Ecomuseum of Argenta comprises another technological site, the Museo della Bonifica (Museum of Land Reclamation), located at the hydraulic centre of Saiarino, featuring pumping plants that supervise water management between the Apennines and the Adriatic Sea. Finally, the Museo Civico (Civic Museum), which includes the Pinacoteca (Art Gallery) and an archaeological and artistic section at the Chiesa di San Domenico in Argenta. These three museums complete the ecomuseum complex and form its urban centre.



- Community

The name Argenta derives from Rurâ Argentea or Arientea, perhaps due to the sparkle of white poplar leaves and of the sun reflecting on the water. The area of Argenta became part of Ferrara only during the modern era, starting with the rule of the House of Este. While living in hostile lands, men have had the ability to adapt and this "know-how" is testified by the tools and objects exposed in the anthropological section. A special type of worker was born, one who offered his strength and, depending on the season, faced the harshness of the valley: the so-called "scariolante" [scariulènt], wheel barrow workers who moved earth to reclaim land, excavate and channel canals and rivers, as well as the "vallarolo" [valaròl], who removed marsh grasses, such as the common reed (*Phragmites australis*) [càna], the Typha (*Typha* sp.) [pavira] and the desert false indigo (*Amorpha fruticosa*) [gažia], and picked common osier (*Salix viminalis*) [strupìa] and wood species from lowland forests. Hunting and fishing are activities that allow survival, demonstrating throughout the years that civilisation in this area was based on water and local food, which relied on its own resources. Today, while hunting has been banned in order to protect species at risk, fishing is an indicator of the quality of water and of environmental balance.



Video: *Le erbe palustri* (The marsh grasses) and *Al valaròl* - Olao Mingozzi.

Exhibits on a platform:

Boats [bèrca]: the small one was used for hunting and fishing, whereas the larger one was used for taking rice and marsh grasses out of the valley [švaladùra].



A comb [pètan]: it was used to remove the portions of sedges (*Carex* sp.) that could no longer be used.



A needle [gôcia] and the "stricadur": these tools were used to prepare bundles of common reed (*Phragmites australis*) used to build huts, roofs and walls.



A machine to manufacture brooms: the inflorescence of common reed (*Phragmites australis*) were inserted into this machine in order to manufacture a special type of broom used to collect dust and remove cobwebs.



A barker [sčiapèla or scurzaròla]: it was used to strip the branches of the common osier (*Salix viminalis*) and *Amorpha fruticosa* [gažia].



An anvil and a small mallet [piènta e martèl]: these object were used to sharpen the blades of scythes and of other cutting tools.



Cutting tools: pruning hook [pnèt], bill-hook [rónca], hacksaw [šghèt] and tools used for various purposes, for example to prune marsh grasses or cut thicker branches.



Exhibits on the wall: objects dating back to the Middle Ages, which were used in the Argenta area in daily life and for household organisation (13 - 14th centuries): fragment of glazed pottery, ceramic pot with holes, semi-circular iron handle with curved ends, metal knives and a small iron scythe.



Chairs: the ongoing activity of the "scarannai" [scaranèr], who still manually stuff chairs with straw by using raw materials (greater pond sedge – *Carex riparia*) from the valley



- The projects

The projects that the Ecomuseum suggests concerned the enhancement of this territory through local community and economic development. Through the project "The community tells. Flavours and Crafts", for example, the Argenta municipality, in cooperation with the Ecomuseum, has started a journey to valorise the people and the wealth of their knowledge. Crafts are useful, not only to make Argenta more appealing but also to be transmitted and innovated with new projects aimed at all citizenship (young people, businesses, families).

- The eco-museum

The eco-museum (from the Greek *oikos*, house, family, from which "economy") evokes both the physical dimension of the territory and the immaterial and intangible of the historical, social and economic heritage. Piedmont was the first Italian region to legislate on ecomuseums in the 1990s, then Umbria, Lombardy, Tuscany and Trento. Sardinia and Puglia are under preparation. At present there is a proposal to create a national co-ordination-observatory of ecomuseums between regions.

In Emilia Romagna, the museums concerned and the Cultural Heritage Institute have agreed on the opportunity to establish a coordination of activities and initiatives related to the themes, typologies and eco-museum experiences, also expressing the common purpose of starting a process of building a network. The museums involved are:

- **Ecomuseo della Collina e del Vino - Castello di Serravalle (BO)**
- **Ecomuseo di Argenta (FE)**
- **MUSA - Museo del Sale - Cervia (RA)**
- **Ecomuseo della Civiltà Palustre - Villanova di Bagnacavallo (RA)**
- **Idro-Ecomuseo delle Acque - Ridracoli (FC)**
- **Museo del Cielo e della Terra - S. Giovanni in Persiceto (BO)**
- **Giardino delle Erbe A. Rinaldi Ceroni - Casola Valsenio (RA)**
- **Centro di Educazione Ambientale - Museo del Cervo - Mesola (FE)**
- **Manifattura dei Marinati - Comacchio (FE)**
- **Centro di Documentazione sul Mondo Agricolo Ferrarese - S. Bartolomeo in Bosco (FE)**
- **Museo dell'Aceto Balsamico Tradizionale - Spilamberto (MO)**
- **Museo del Paesaggio dell'Appennino Faentino - Riolo Terme (RA)**
- **Parco del Delta del Po - Comacchio (FE)**

2) The Po Delta

The Park of the Po Delta in the Emilia-Romagna region spreads from the tributary river Po di Goro throughout the historical Delta of the river Po. It includes the mouths of several Apennine rivers (Reno, Lamone, Fiumi Uniti and Bevano), the brackish wetlands located along the Adriatic coast and in the nearby inland area (Sacca di Goro, Valli di Comacchio, Piassasse di Ravenna and Saline di Cervia) and the freshwater inland wetlands typical of the Valli di Argenta (Argenta Valleys).



- The Park sites

- **Campotto di Argenta**

The Valli di Argenta (Argenta Valleys) are the only freshwater inland area of the Park, resulting from land reclamation at the beginning of the 20th century. Here, water is collected in retention basins, where it is temporarily retained before flowing into the river Reno (when it is able to receive it), thus preventing devastating floods, such as those occurred in the past, and the subsequent reforming of wetlands. Its natural environments are the hygrophilous wood, the floating plants, the reed beds and the wet meadow.



- **The Valli di Comacchio**

Fascinating habitats characterised by the "Casoni di Valle", old fishing houses, and the "lavorieri", large fishing traps for catching eels, which are later marinated at the Manifattura dei Marinati. The Saline di Comacchio, which date back to Napoleon's time, are salt flats populated by flamingos that have been recovered to enhance the local tradition of salt flats. Here, visitors are able to discover a natural and ethnographic heritage that is unique in Italy.



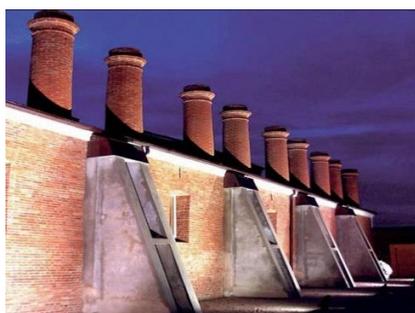
- **Volano, Mesola and Goro**

It is the northern boundary with the area of the Park of the Po Delta that lies in the Veneto region. It features the Gran Bosco della Mesola, a wood populated by deer, and the Sacca di Goro, a lagoon famous for its clam farming. Other sites worth visiting are the Abbazia di Pomposa, a Benedictine abbey, and the Museo del Cervo (Deer Museum) at Castello di Mesola (Mesola Castle).



- **The historic centre of Comacchio**

Comacchio, also known as “small Venice”, can be reached by crossing the unique Trepponti Bridge. Comacchio is a symbol of the population of the Po Delta, which originated from Spina, a Greek-Etruscan city that was later annexed to Rome, thus becoming an emporium city in the High Adriatic area in the Middle Ages and in modern times. The Museo del Carico della Nave Romana *Fortuna Maris*, dedicated to an ancient Roman ship, is definitely worth a visit.



- **Pineta di San Vitale and Pialasse di Ravenna**

Dune formations corresponding to the Adriatic fossil coastline, which stand out thanks to the abundance of Italian stone pines. Here are some of the main historical routes: the Palazzone di Sant'Alberto, with its Brandolini bird collection; Ravenna, with its archaeology park in the Roman harbour of Classe, the Early Christian Basilica di San Vitale with its renowned mosaics, etc.



- **Pineta di Classe and Saline di Cervia**

Located at the southern end of the Park, the salt flats of Cervia are still active thanks to the community of the "salinari" whose work gives shape to a productive land, typically white due to its salt heaps (the so-called "white gold"), which is then refined in the homonymous warehouse along the harbour canal. The special salt-loving halophyte vegetation is home to countless colonies of pink flamingos.



- The wetland (le zone umide)

The wetland areas are characterised by the permanent or temporary presence of water or of soil impregnated with water. They can consist of marshes and swamps, peat bogs, natural or artificial basins, either permanent or temporary, with stagnating water or freshwater, brackish or salty water,

including seawater expanses with a depth that does not exceed six metres during low tide. Their value is priceless as a natural habitat for aquatic birds, as a climatic thermal regulator, and for the functioning of ecosystems, on which populations worldwide depend. The Ramsar Convention (Iran, 2 February 1971) has acknowledged them as natural resources of international importance: 50 of these are located in Italy, 10 of which in the Emilia-Romagna region, all within the Po Delta Park.



Video: *Le zone umide* (The Wetlands) – Filippo Piccoli and Monia Cattabriga.

- The management
In Campotto, the Consorzio della Bonifica Renana plays a key role in the daily management of wetlands. Here, the Life community projects were implemented with the aid of all the managing bodies of the area, in addition to the Consorzio, the Municipality of Argenta and the Park of the Po Delta. These projects enabled important goals to be achieved with regard to the preservation of habitats and water monitoring, aimed at reducing the impact of man's action and favouring an increase in the number of native species, thus contrasting the spread of non-native species.

Video: *Gestione zone umide* (Wetland management) - Daniele Zagani.

- The Argenta Valleys
The Valli di Argenta (Argenta Valleys) are the internal freshwater wetlands of the Park of the Po Delta, which are maintained environmentally balanced thanks to the communicating vessels system resulting from hydraulic and

mechanical land reclamation. They are depicted on the plan on the ground, which shows the water retention basins of Campotto, Bassarone and Vallesanta, as well as the Bosco del Traversante, a wood covering about 1,624 hectares. The hygrophilous wood, the wet meadow, the reed beds and the floating plants: these are the four sceneries of the beautiful landscape of the Valleys, arising from the different level and presence of water, which allows the existence of the plant and animal species typical of the habitats of the Oasis of Campotto.



1. Wood

"...a rare environment also on a national level, which can be found in less than 10 river basin areas in Central and Southern Italy."

The Bosco del Traversante, a residue of the lowland forest, common in the lower Po valley before the land reclamation works, extends between the water retention basins of Campotto and Vallesanta in area that covers about 150 hectares.

a. Vegetation

Its vegetation, rarely reached by water, consists of herb and shrub varieties, such as horsetail (*Equisetum spp.*), thornless blackberry (*Rubus ulmifolius*),

common hawthorn (*Crataegus monogyna*), common dogwood (*Cornus sanguinea*), and greater herb varieties, especially the Narrow-leafed Ash (*Fraxinus angustifolia ssp. oxycarpa*) and the English oak (*Quercus robur*) but also elms (*Ulmus minor*), alders (*Alnus glutinosa*), white poplars (*Populus alba*) and white willows (*Salix alba*).

b. Animals

Coleoptera, such as the rare hermit beetle (*Osmoderma eremita*) and the shiny beetle (*Protaetia aeruginosa*), nest inside tree trunks and hide in the dead wood. In addition to resident species, such as the Great spotted woodpecker (*Dendrocopos major*) and the European green woodpecker (*Picus viridis*), the local bird fauna also features migratory birds, such as the Black-crowned Night Heron (*Nycticorax nycticorax*) and the Golden Oriole (*Oriolus oriolus*) with bright yellow feathers, whose singing can be heard coming from the depth of the wood; predators include the common buzzard (*Buteo buteo*) and the Long-eared Owl (*Asio otus*). This wood is also inhabited by mammals, such as the red fox (*Vulpes vulpes*), the weasel (*Mustela nivalis*), the European or brown hare (*Lepus europaeus*), the European badger (*Meles meles*), the crested porcupine (*Hystrix cristata*), the European roe deer (*Capreolus capreolus*), the European or common hedgehog (*Erinaceus europaeus*), the beech marten (*Martes foina*), and reptiles including the green whip snake (*Hierophis viridiflavus*), and amphibians such as the agile frog (*Rana dalmatina*) and the Italian tree-frog (*Hyla intermedia*).





Video: *Gli animali del bosco* (The animals of the wood).

2. Wet meadows

"In order to re-establish the ecological balance and increase biodiversity, new wet meadows have been recently created in Campotto."

When the water level increases, the wood leaves room to the wet meadow, where water is particularly shallow (only a few centimetres high), thus favouring the presence of Charadriiformes.

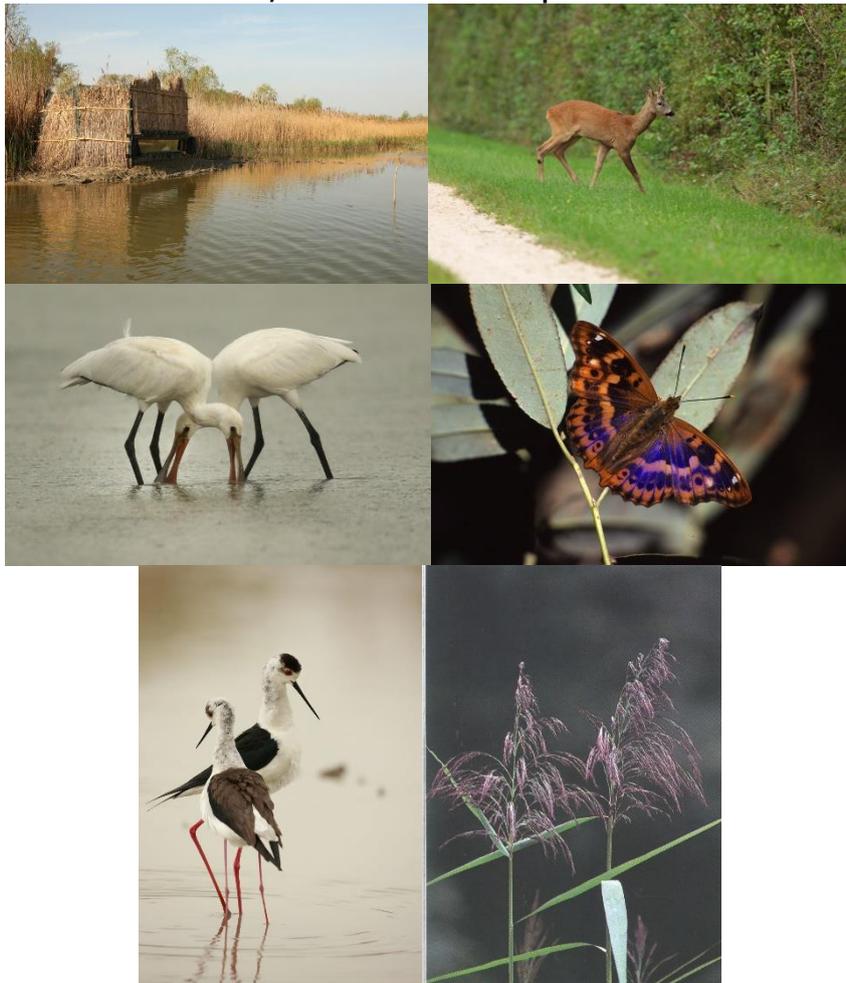
a. Flora

The wet meadow is dominated by the Tifeto, in which the dominant species are the Mazzasorda Minore (*Typha angustifolia*) and the Mazzasorda Maggiore (*Typha hardwood*) and the "Fragmiteto", where we can find the marsh cane (*Phragmites australis*). Near the water and along the edges, in places that are occasionally inundated, we find the Cariceto, together with the main species caries (*Carex elata*), hosts: the Loosestrife (*Lythrum salicaria*), the flowered Joint (*Butomus Butomus*) and the Marsh Buttercup (*Ranunculus sardous*).

b. Fauna

Charadriiformes, known for their particular way of feeding: they dip their beak into the mud to catch prey such as molluscs and other invertebrates. These include the Eurasian spoonbill (*Platalea leucorodia*), the black-winged stilt (*Himantopus himantopus*), the northern lapwing (*Vanellus vanellus*), the black-tailed godwit (*Limosa limosa*), and the ruff (*Philomachus pugnax*). There are also Ardeidae, for example the

purple heron (*Ardea purpurea*), the grey heron (*Ardea cinerea*) and the great egret (*Egretta alba*), as well as Anatidae, such as the mallard or wild duck (*Anas platyrhynchos*), the Eurasian or common teal (*Anas crecca*), the gadwall (*Anas strepera*) and the garganey (*Anas querquedula*). The minor fauna consists of ground beetles, fireflies and colourful day-flying butterflies. According to popular legends, they live, together with flowers, in natural and fictional landscapes: the Southern Frestoon (*Zerynthia polyxena*), the Old World Swallowtail (*Papilio machaon*), the Large White (*Pieris brassicae*) and the Small White (*Pieris rapae*) are the fairy-tale creatures who stand out for their colours, symmetry and elegance in the biological environment of Campotto. At the museum, 20 of these species are on display.





Video: *Gli uccelli della valle e Tramonto.*

Video: *Gli animali della notte.*

3. The reed bed

"...there are two types of reed bed: one is dominated by the lesser bulrush, often found in deep waters, the other, characterised by the common reed, is found in shallower waters."

With the increase in the level of water and its time of permanence, the reed beds are an environment characterised by perennial plants with submerged roots and most of the trunk and leaves rising out of the water. Here, the common reed (*Phragmites australis*) prevails among other plant species due to its high competitiveness.

a. Flora

The common reed (*Phragmites australis*) prevails among other plant species due to its high competitiveness. These areas also feature the mad-dog weed (*Alisma plantago-aquatica*), the simplestem bur-reed (*Sparganium erectum*) and the Senecio paludosus, together with the yellow lily (*Iris pseudacorus*), the most common and eye-catching flower, whereas the common duckweed (*Lemna spp.*) and Floating Fern (*Salvinia natans*) float freely on the surface.

b. Fauna

Passerines nest here, for example the Zitting Cisticola (*Cisticola jundicis*), the common reed bunting (*Emberiza schoeniclus*), the Great Weed Warbler (*Acrocephalus*

arundinaceus) and the Reed Warbler (*Acrocephalus palustris*), of which the museum tells the unusual story of a female who raised a little common cuckoo (*Cuculus canorus*), forcing itself into the nest and discarding the eggs laid. Since the reed beds are a perfect hiding place for these small guests, even swallows (*Hirundo rustica*) build their nests here. In fact, in Campotto, more than in any other wetland region of Europe swallows can considerably increase their body mass through feeding in order to face the long crossing of the Mediterranean and Sahara desert without intermediate stops, before reaching their migratory destinations in Africa. Reptiles can also be found here, such as the dice snake (*Natrix tessellata*) and the grass snake (*Natrix natrix*), as well as a great variety of insects, which are eaten by passerines.



Video: *Il cannaieccione e La cannaiola e il cuculo*

4. Lamineto

"The white water-lily is the main protagonist, together with other species, such as the yellow water-lily or the fringed water-lily, both with yellow flowers."

The term "lamineto" (floating plants), derives from the word "lamina" (leaf), and indicates an expanded section of the leaves: a group of aquatic plants that includes completely submerged plants and species with floating leaves on the surface of deeper, stagnant or slowly flowing waters.

a. Flora

Among other plant species, such as the whorled watermilfoil (*Myriophyllum spicatum*) and the Rigid Hornwort (*Ceratophyllum demersum*), a large number of small animals finds shelter here. Instead, the Common Bladderwort (*Utricularia australis*) is a submerged carnivorous plant, which preys on tiny crustaceans.

b. Fauna

A small world develops here among the lilies where the Whiskered Tern (*Chlidonias hybrida*) loves to build its nest and birds are great swimmers, such as ducks, or great divers, such as the little grebe (*Tachybaptus ruficollis*) and the great crested grebe (*Podiceps cristatus*), whereas the ichthyophagous species, such as herons, feed on amphibians and fish species in shallow waters. The elegant, dancing dragonflies are the main insect among the floating plants, a borderland area between water and air, which dragonflies need for their entire life and reproductive cycle, as portrayed in detail in the flying-mating model at the museum. The depth of waters is the ideal place to house the pike (*Esox lucius*), the carp (*Cyprinus carpio*) and European eels (*Anguilla anguilla*), despite the of the wels catfish (*Silurus glanis*), which has to be contained as a priority in environmental readjustment interventions





Video: *Il mignattino piombato*.

5. Activities

a. Scientific

The launch of research in the field of applied ecology and spatial planning becomes one of the strategic objectives, in favour of scientific knowledge with the application of contemporary technologies. Environmental protection measures are carried out through the application Progetti Life Natura, which aims at:

1. The improvement of hydraulic functionality;
2. The reduction of the alien species of flora and fauna;
3. The protection of indigenous species;
4. Better management of anthropogenic activities;
5. The elaboration of a local agro-environmental agreement between the Po Delta Park, the municipality of Argenta and 24 farms;
6. A campaign to monitor water, vegetation, insects, fish, herpetofauna, bats and birdlife.

Is proposed the use of technical and scientific tools to monitor the local fauna: entomological nets and umbrellas for insects, nets and rings for monitoring birds, especially migratory birds, and bat detectors for studying Chiroptera (bats). Finally, traps and similar means are aimed at reducing and monitoring infesting non-native species: the wels catfish (*Silurus glanis*), the Louisiana crawfish (*Procambarus clarkii*), the coypu (*Myocastor coypus*) and the red-eared slider (*Trachemys scripta elegans*), which are all extremely aggressive towards native species.



b. Divulagation

The Museum of Argenta Valleys, head of the Center for Education of Inter-Municipal Wave and Rivers Sustainability, proposes a number of activities for dissemination purposes: beside the laboratories dedicated to the schools, of every order and degree of the territory, offers excursions in the valley, visits guided tours to museums and oases, and promotes topics for knowledge and the enhancement of the territory.

3) The Land reclamation

- Territory evolution

During man's struggle to reclaim the marshlands, maps have proved to be a fundamental tool to control this territory. From the 16th century onwards, the hydraulic situation in the plain of Bologna has been documented through a series of papers that record the evolution of mapping techniques. The examples displayed represent the three different historical periods and three implementation styles. The map by Ignazio Danti, dated 1580, is a pictorial one and outlines the shape of the landscape in the form of an artistic representation. One hundred years later, the map by Camillo Sacenti, dated 1687, has a more graphical approach with a schematisation that

closely matches actual proportions. In 1874 a topographic map of the plain of Bologna highlights the results of the application of scientific principles to mapping techniques, thus providing a more modern map. If we compare the three maps, we can see the gradual reduction of the marshlands around the area of Argenta.

1. From wetlands to Valleys

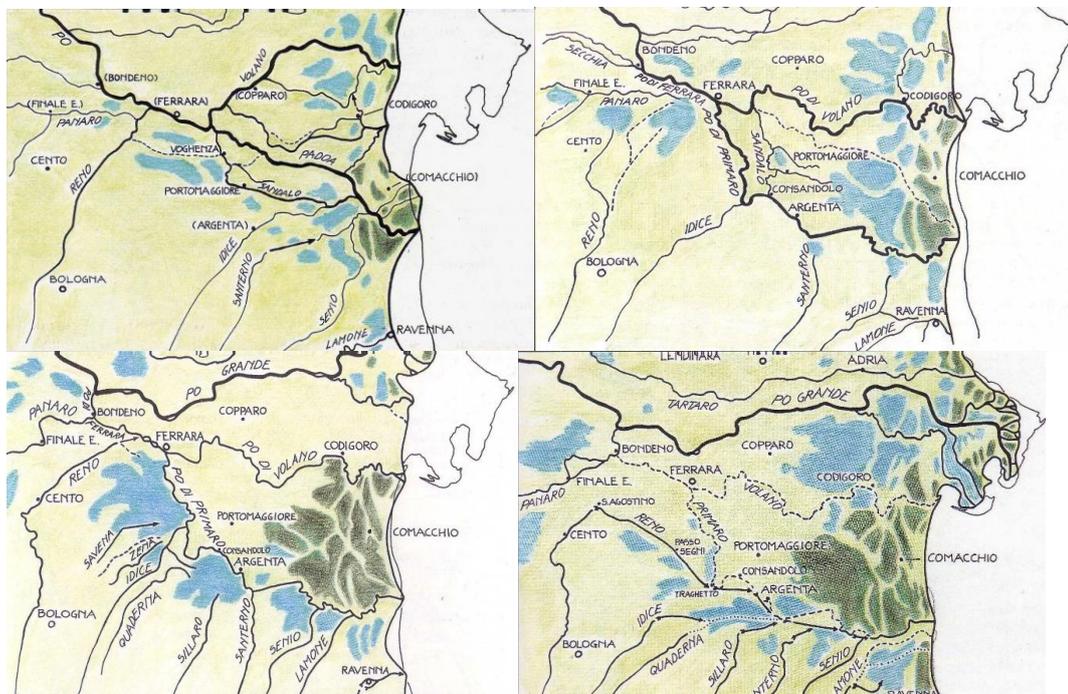
In the last millennia, the largest quantities of debris have been deposited in the riverbeds and on the sides of the rivers, thus giving rise to the formation of natural embankments and conferring to the rivers higher elevations than those of the surrounding areas. Furthermore, sea motion and wind action have intervened increasing the eastern area of the Po, leading to the formation of coastal cordons, delta and lagoon. The geomorphologic evolution of the territory has been complicated by the phenomenon of subsidence and by the continuous contribution of sediments. This situation has led to an unstable territory characterized by vast depressed areas located between the waterways and without slope that fail to drain naturally the waters that often overflow and give life to wetlands.



2. The rivers

Evolution of the Rhine: during the Middle Ages, climate change caused considerable variations of the rivers with the landfill of the riverbeds and the flooding of large depressed areas. Was created a channel that took the water from the Po of Ferrara

to convey it in the Gaibana. This became the main branch of the Delta, then called Primaro, fed in its path from the waters of the Santerno. At the beginning of the XV century the Rhine didn't find a precise delivery. Following a contrast between Bologna and Ferrara, it was decided to enter the Rhine in the Po area near Ferrara the river. In the following years the continuous flooding of the Rhine brought to the landfill of the Po of Ferrara leaving the city without navigation: it was only with Benedict XIV that it was decided for the definitive inlveamento of the Rhine in the old riverbed of the Primo via the cable Benedictine. The transformations of the Rhine-Primo and its tributaries determined the definitive form of the hydraulic structure of the Rhine



- The first Land Reclamations
 1. Land Reclamation trough silting-up

The bridge is a natural process of remediation of depressed areas. This method was used to heal the territories of the lower Bolognese places to the right of the Rhine River. The process is based on the exploitation of the turbidity of a course of water that feeds a dammed area (bridging). The solid content of the water is deposited on the bottom by bridging the depressed area gradually, while the clear waters are conveyed to a receiver that discharges them.

2. Land reclamation by drainage

Is possible when the land for reclamation lies above sea level and has a slope allowing the outflow of waters which are directed into canals to be taken towards main rivers or the sea.

- Mechanic reclamation

1. History

At the end of the 1800s, the Rhine became a wall-hung in several areas, making the draining of plain waters more problematic, the lower lands could not naturally drain the waters in the Rhine, thus contributing to widening the wetlands, unhealthy and unfit To agriculture and human settlements. In 1909 the five districts of the Bolognese territory were gathered under the "Consortium of Reclamation Renana", whose director, Pietro Pasini, was instructed to realize a project of hydraulic accommodation of the low Bolognese plain. In the first year the work was directed to the construction of the shipyards: in 1915 the first electrical and telephone lines of the valley were installed. In order to guarantee the lifting of the water, two scooping plants (Saiarino and Vallesanta) equipped with 9 pumping units can be made to raise each 10,000 litres of water per second. In 1925, in the presence of Vittorio Emanuele III, the plants were inaugurated and two years after the reclamation work was finished.





2. News

Today the territory of the Bolognese plain appears quite different from the beginning of the 1900, when the reclamation project was realized. The territory has a high agricultural vocation and it becomes increasingly pressing the need to provide farmers with water to irrigate. The expansion crates become so large reservoirs of water reserve that in the summer are reintroduced into the canals and supplied to the farms of the territory. Rare rainfall during the year but with a torrential character, overbuilding and subsidence are the new challenges that lead to a continuous and rapid changes in the territory and impose new reclamation projects: the task of the consortium becomes increasingly important.



