

Fishponds in the Baltic States

Historical Cyprinid Culture in Estonia, Latvia and Lithuania

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The three Baltic States – Estonia, Latvia and Lithuania – are currently among the smallest aquaculture producing countries in the European Union (Eurostat 2011: 142). The main species produced in Estonia is rainbow trout, *Oncorhynchus mykiss* (Walbaum, 1792), while the common carp, *Cyprinus carpio*, is the main species in Latvia and Lithuania. So far, there has been very little research into the history of fishpond culture in the region that today constitutes the Baltic States. However, the cultivation of cyprinids in ponds in this area can be traced to as far back to medieval times. As well as the common carp, the crucian carp, *Carassius carassius*, tench, *Tinca tinca*, and, more recently, during the Soviet-forced annexation, the Prussian carp, *Carassius gibelio*, have also been farmed. The latter species was introduced into the Baltic States in the late 1940s (Ojaveer, Pihu and Saat 2003: 231; Vetemaa et al. 2005; Aleksejevs and Birzaks 2011). Undertaking research across the Baltic region is complicated by the fact that the available sources are in many different languages, which is a consequence of the region's turbulent political history. Different rulers have conquered the area, and national borders have shifted numerous times. The present day borders of the three Baltic states of interest to this study emerged with the dissolution of the Soviet Union, when they reclaimed independence.

The historical establishment of pond culture in the Baltic territories is highly intertwined with the earlier monastic culture and feudal structures. For the moment though, we must be content with only a few examples until more in-depth studies become available. During 1627–8, when the northern parts of the Baltic territories were part of Sweden proper, Georg von Schwengeln (1590–1664), a Baltic-born German cartographer, was making maps of Estonia, Livonia and the island of Saaremaa (Ösel). He also drew the

earliest scale maps of the greater Riga area and of Zemgale. In 1681, during the reign of the Swedish King Charles XI, thirty-eight surveyors, under the leadership of Arnold Emmerling, travelled to Riga to prepare cartographic material for the Great Land Cadastre. The mapping of Swedish Livonia took five years (Tarkiainen 2010). The map scale was in Swedish cubits, with the occasional addition of a diagonal scale. New cartographic methods and instruments ensured a greater degree of precision and quality than before, but they also removed marginal data (Sparītis 2009). Thanks to these historical maps we can describe and examine the pond culture prevailing in the seventeenth century. For the southern part of the Baltic territories (i.e. contemporary Lithuania), we rely very much on written documents (cf. Cios 2012). The material presented here should be regarded as a brief introduction to this rather neglected subject.

The monasteries

The oldest data about aquaculture is connected with the monastic orders, which played an important role in the Christianisation of the Baltic region, especially the Cistercians and Dominicans. The Cistercian Order held a crucial position up to the 1230s in integrating Livonia with the Christian world (Tamm 2009). They established the first monastery in Dünamünde (Daugavgrīva) in Livonia in 1205–7. According to Tuulse (1942: 268), the monastery was founded at the mouth of the Daugava River, where the proximity of the water made it possible for the monks not only to monitor this important waterway, but also to practice fish farming.

Very few reliable sources about monastic fishponds exist from Estonia, although some traces of fishponds are known. Both the Reval (contemporary Tallinn) and Riga Dominican monasteries were founded between the late 1220s and the early 1230s. These first monasteries have not survived and no evidence has been found of ponds in their vicinity. The St Bridgettine Convent in Pirita just outside Reval was a monastery for both monks and nuns. Its location was carefully chosen. It was situated in the harbour area, near the riverside lands, which was an area that functioned as an important trading site at the time. The Pirita Convent, which was based on St. Bridget monastery in Vadstena in Sweden, was founded in about 1400. The Teutonic Order played the main role in establishing the convent since it was on their land the buildings were constructed. In 1407, two monks from Vadstena Abbey arrived in Reval to counsel the merchants. The first permit to break dolomite to gather building material to build the complex was acquired in

1417. The abbey was consecrated in 1435 (Raam 1994; Tamm 2010; Markus 2013). On the old cadastral map from 1689 there is a pond in the close vicinity of the monastery, possible inspired by the ponds in Vadstena, but we have no record of what was kept in them.

Eight kilometres north of Tartu, there was a Cistercian monastery called Falckenau (Kärkna Abbey). It was founded in 1233 and destroyed in the Livonian war in 1558. According to Tuulse (1942), the location of the monastery is typically Cistercian, far from the main urban centre and the main roads, at the mouth of the river Amma. The high banks of the river provided the conditions for fish farming and the surrounding forest offered an opportunity for land clearance work. In the fourteenth century, the monastery still operated a mill, but the moat was by now largely overgrown and the fishponds were in disrepair (Tuulse 1942: 268). Despite this, on the 1783 cadastral map a pond is clearly visible near the monastery. However, it could have been made in the eighteenth century.

Another example of fishponds comes from Padise Cistercian Abbey in Hajdu County, which is said to have had a three-pond flow-through fish farming system. No local evidence exists and no medieval sources have been found to substantiate this. The first map of Padise is registered in the Swedish cadastre from 1697 and it indicates ponds connected with the manor house built in the vicinity of the convent (Ridbeck 2005). At the Kuimetsa Nunnery, fishponds have been found but they are not dated. On the map from 1687 there are two ponds on the manor's estate.

City ponds

A special feature in Swedish historical aquaculture was breeding crucian carp in ponds inside the cities. This is also known from the Baltic territories of Sweden proper. There were ten cities in Estonian territory in the late sixteenth century. After the wars of the early seventeenth century, town rights were preserved by Reval, Dorpat, Narva and (New) Pernau (Pärnu). Arensburg (Kuressaare) and Narva gradually regained their status; the rest had been destroyed or passed into private hands (Raun 2001). With 10,000 inhabitants Reval was the third largest Swedish city after Stockholm and Riga in the seventeenth century. The city had several ponds within the city walls. Written sources are few, but in *Revaler Kämmereibuch*, there is a passage dated 27 September 1460 which indicates that the Town Council paid half a Riga Mark for 300 crucian carp that were placed in St Gertrud's pond. The location of the pond is not clear, but a possible site of the pond is near the St

Gertrud Chapel by the Great Coastal Gate or Suur Rannavärv (Vogelsang 1976). All fish in the city's ponds were the property of Reval Town Hall. Fishing in the ponds was prohibited without prior consent in the form of a permit from the Council. A fine of one mark was the penalty for those who broke this law. There is also evidence of fish farming in the ponds on the 1688 and 1686 cadastral maps.

There are ponds located just outside the town centre on the 1729 Dorpat (now known as Tartu) map. According to zoologist, Benedict N. Dybowski crucian carp existed in all local rivers, on the banks of Lake Peipus, in several ponds on the Emajõgi River (Embach) and in the trenches of Dorpat. He remarks that strangely enough the species very rarely appeared in the fish market in Dorpat. Dybowski also claims that the crucian carp ponds were missing in Livonia's more remote areas (Dybowski, 1862:49). He states that there were small ponds almost everywhere in the town – in all the trenches and gardens, and in all other water reservoirs. He also observed that the fish grows very well, despite the water freezing during winter. There were not less than thirteen small ponds in the courtyard of Klattenberg's House on Aleksandri Street. There were also several ponds in the churchyard of the Old Believers Prayer House (Dybowski 1862: 50–52).

In Parnau (Pärnu) evidence has been found of ponds in gardens (*dyckgarten*). Town councillors Berndt Hessels, Luder Klanth, Melcher van Galen and merchant Johann (Hans) Sack all had gardens with ponds. It is assumed that these ponds were not merely dug for ornamental reasons, but for fish farming, although a fishpond is specifically mentioned in the town register only once. Melcher van Galen constructed ponds in connection with a sauna, which was common at the time (Pöhltsam and Vunk 2001). In some of the fortified towns there were also ponds, for instance in Lihula 1683.

Manorial pond culture during Swedish rule

Most Livonian lands were in private ownership by the end of the sixteenth century, and the owners were mostly Baltic Germans. The German and Danish vassals initially lived mostly in new towns and castles. Their country houses served as a stopover while collecting taxes and did not much differ from wealthier farms. The first vassals began moving from castles to manor houses in the late thirteenth and early fourteenth centuries (Beerencreutz 1997: 22–24).

The countryside had characteristic features influenced by German colonial culture. This consisted of towns and medieval urban structures with

castles, manors, inns, mills, and dispersed peasant farmsteads (Sparitis 2009). During the Swedish regime 1561–1710 (formally at the Treaty of Nyland 1721), a manorial upswing with the formation of small estates was seen in the countryside (Beerencreutz 1997: 53). In the century of Swedish rule, rural manors were usually enclosed constructions. The main buildings of the manor were often placed around a courtyard. The rest of the buildings were distributed following the contours of the fencing around the territory, sometimes also at the sides of access roads (Sparitis 2009).

The rural population was now divided into two main groups: landed gentry and peasants. The landed gentry consisted of Germans and increasingly of Swedes, while the peasants were Estonian-speakers and a tiny group of Swedish-speaking coastal dwellers (Raun 2001). At the end of the seventeenth century there were about 500 manors in Estonia and about one third of these were established in the first half of the century (Beerencreutz 1997: 55). In total, 1,254 manors have existed over the centuries. There are few written sources available that refer to the manorial pond culture. But in many of the Teutonic Order castles, including those in Reval, *Fischmeister*s were employed. A *Fischmeister* (Fish Master) is a lower officer of the Order. Manor earnings received from fishing and fish farming were administered by the *Fischmeister* (Turnbull 2003: 23). This suggests that these manors were involved in some form of cultivation or harvesting of fish, although it is more difficult to say from this equivocal evidence what the role of fishponds was in this enterprise.

Tuulse (1945) refers to fishponds in castles in Livonia as early as medieval times. On the east coast of Saarenmaa, Maasilinn Castle (Soneburg) was erected in the fourteenth century and subsequently reconstructed in 1518. The castle had a trench system and on the south side three large rectangular fishponds were created, and according to Tuulse (1942: 187) they were in the same form as at other waterfront castles around the country at that time. Sesswegen Castle (Cesvaine), located in the so-called Latvian Part of the Archdiocese, was built in the seventeenth century (Tuulse 1942: 205). The castle was not one of the Orders' residences, rather it belonged to Vilhelm Fredrik Taube, Fier and Sesswegen. The castle, however, was confiscated by King Gustavus Adolphus and was bestowed to Count Nils Brahe. The fortified castle had a central location in a densely populated area. On the basis of eighteenth century drawings and plans of Sesswegen one can see that apart from the protection offered by the wall and water surrounding the castle there are two large fishponds situated outside the castle walls (Tuulse 1942: 205). The Wesenberg (Rakvere) and Loodh castles had crucian carp ponds

that are depicted on the 1683 map. On the sixteenth century map of Kremon Castle belonging to the Domcapitul, a large pond outside the castle can be seen that has a similar appearance to ponds at Swedish castles. In 1680, there are plenty of fishponds depicted on the map of Ronneburg Castle (Rauna), which was the residence of Riga's Archbishop.

King Gustav II Adolf's Field Marshal Gustav K. Horn was Governor General of Livonia and he wanted to build a residence for himself on his estate at Vainiži (Wainsel) near Limbaži (Lemsal). Horn, one of the king's closest companions-in-arms in the Thirty Years War (1618–1648), had participated in the conquest of Livonia and the king awarded him the districts of Alūksne (Marienburg) and Gulbene (Schwanensee), as well as the Vainiži estate, making Horn the third biggest land owner in Livonia after Axel von Oxenstierna and Banér. The surveyor Faber's layout plan (1649–54) of the manor ensemble and a Baroque garden are preserved in the National Archive in Stockholm. A new manor castle was planned that was surrounded by a circular moat and a fence. The plan was complemented with outbuildings, a mill, fruit and vegetable gardens and decorative parkland that included several large fishponds. This plan, however, was never realised (RA, 2025:02).

A map from 1690 shows a pond on the grounds of the Wrangelshof (a manor under Helmet). The castle had belonged to Axel Oxenstierna, who in 1636 gave it to Field Marshal Herman Wrangel in exchange for Wohlfahrt in the Livland region. Fishponds are shown on a 1689 map of Wiems (Viimsi) Manor. Additionally, Swedish style fishponds are shown on maps of Jegelecht (1692), Kuimetsa Castle (1687, 1765) and Saren Hoff (1688). Other seventeenth century estates with large ponds are Ruttigferhoff (1690), Rathshoff (1684) and Hofwet Viol (1703).

Fishponds at Estonian and Livonian manors after 1710

The 1710 capitulations of the corporations of knights and towns, confirmed by subsequent tsars until Aleksander II (1855–1881), established the relationships between Estonia, Livonia and the Russian Empire. Peter the Great gave the Baltic German nobility back their manor houses which the state had expropriated during the Swedish years. During all this time Estonia belonged to the German cultural sphere and this was further facilitated by the large-scale immigration of the German intelligentsia in the eighteenth century (Raun 2001: 37ff).

A large number of estates were beginning to rearrange their estates and gardens during this time and a number of ponds were constructed. Some of

these newly constructed ponds were extremely elaborate, for example Pöllküll (1882), Kattentack, Neu-Oberpahlen and Wannamois. Anzen (Antsla) Manor was one of the largest fish producers in Estonia during this period and it also operated as a provider of breeding stock to all the others. The general understanding is that it is likely that aquaculture in one form or another was practised here from the Middle Ages when the owners were the noble family von Uexkülls.

Another manor that practised fish farming during this time was the Piirsalu Estate, during the life-time of Cornelius von zur Mühlen (1756–1815), whose favourite hobby was fish farming. All of the following estates had large ponds depicted on maps: Addaffer, Annigfer, Chatarinenhof Hohensee, Harju-Madise Church Manor, Hermannshof, Kadrina, Kattentack, Kawast, the Karkus Castle, Laimetz, Poll and Neu-Poll, Pöllküll, Menan, Metzikus, Neu-Oberpahlen, Saku, Saue, Sutlep, Vääna, Wallkull, Wannamois and Seyer and Äntu Estate.

Carp ponds on Lithuanian estates

Carp production seems to have been known in the southern Baltic region since late medieval times. In 1402, the inhabitants of Klaipeda Castle consumed 28,000 carp. This tells us that Lithuanian fishpond culture dates back at least to the fourteenth century. Such significant fish consumption indicates that pond culture was well-developed in the Klaipeda region during this time (Žulkus and Daugnora 2009).

The first references to fishponds are in the Statute of the Grand Duchy of Lithuania from 1529 (Czacki 1861, II: 201, 254, 286). The statute refers to how the construction of ponds (and mills) on streams should not inundate other mills or meadows and to punishments for thieves fishing in ponds. Under the statute, when a thief is caught for the first time he is whipped, for the second time his ear will be cut off, and for the third time he will be treated like a thief, i.e. executed. Such references to ponds, as well as the types of punishment, indicate that in the sixteenth century both feudal lords and monarchs were strongly economically engaged in fishpond culture.

Of particular interest are references to carp related to the aristocratic Radziwiłł family. Although the main residence of the family was in Nieśwież (Nesvizh in Belarus), the aristocrats owned considerable estates across the whole territory of the Grand Duchy.

The first reference to the Radziwiłł family is in a letter written in 1567 by King Sigismund Augustus to Mikołaj “Sierotka” Radziwiłł, in which the king

expressed his hope that during his stay in the Lebedzev estate the aristocrat would provide fish from ponds for the royal table (Kaniewska 1999: 537). The next reference is by Jankowski (1898), who states in his description of the Oszmiana (Ašmena) district in southern Lithuania that in the seventeenth century in Lubcza (Lubča by the Niemen River/Nemunas), the Radziwiłł family had “five ponds which provided several fish, in particular carp” (Jankowski 1898: 104, 147). He also presents a letter written on 21 November 1758 in Woroncza (Varonča) by Józef Niesiołowski, in which he states, “I will give an order to catch carp and send the fish on a good road, so they will not get injured”. Carp are also mentioned in Hieronim Florian Radziwiłł’s 1747 diary (Radziwiłł 1998: 29, 35, 45) with reference to his estates in Wyzna and Niehniewicze. The diary describes how Hieronim Florian Radziwiłł as a form of recreation spent some time by the ponds, observing fishing with a seine net, and how he personally took larger carp from the net, while releasing the smaller ones. It also recounts his strong interest in the management of ponds when he gives orders to clear the ponds of weeds. A still greater interest in fishponds was shown by Udalryk Radziwiłł, who invented a machine to cut reeds and other aquatic vegetation in order to increase the productivity of the ponds (Radziwiłł 1761; Górczyński 1964). However, he was criticized by others, who thought he should be doing other things with his time (Bagiński 1854: 36–7). Finally, in a letter from 1902, Michał Abłamowicz mentions “large ponds well stocked with carp”, owned by the Radziwiłłs in Nieśwież (*Falata...* 2008, II: 321).

There are also two sources that indicate consumption of carp by the Radziwiłłs. The first source is a family cookbook dating from 1686–1688 (Moda... 2011). Carp is mentioned in five recipes (for comparison: pike in eighteen, eel in two, herring and perch in one). This indicates that carp was an important culinary fish on the aristocratic menu. The second source is a story by Rzewuski (2000: 174), first published in 1845, in which carp with sweet honey sauce is mentioned as a dish on the menu of a feast. Historically this dish has been the most popular carp dish in Poland.

All of the accounts described above indicate that the Radziwiłł family owned carp ponds for almost 400 years. It is also likely that most of the carp cultivated ended up on the aristocrats’ and guests’ own table.

There are more sources that indicate a pond culture during this time. In a description of Szkudy (Skuodas) in north-west Lithuania, Potocki (1874: 245) states that in 1793 a rich owner of an inn boasted that he had various fish stocks in ponds for his guests – carp, tench, crucian carp, pike and perch. Morawski (1858: 82), describing the village Ustronie (Jundeliškės) by the Wierzchnia River (Verkne), a tributary of the River Niemen in southern

Lithuania, states that “in the old days there was a famous pond, which for over a century has been transformed into a meadow, in which previously carp were kept, most famous in Lithuania. Though at that time carp was not a rare fish in the region, these fish had a particular taste and reached such a size that – like whitefish in Lake Wigry [north-east Poland] – they were sent to the kings as a great delicacy”. In his description of the life of nobility in the countryside in the region of Grodno (Belarus), Count Tyszkiewicz (1865: 7) observed that in one pond there were only carp, while in another only Crucian carp.

The information discussed here should by no means be considered exhaustive but it indicates that carp culture in Lithuania has a long tradition dating back to at least late medieval times. Carp cultivation appears to have been a cultural import related to the Teutonic Order, since the oldest sources of information on carp in Poland is from the northern part of the country (Joachim 1896). The Christianization of Lithuania in 1387 might also have served as an additional strong stimulus to consume more fish and relatedly to develop pond culture.

In Lithuania, in contrast to Poland, no large pond systems were developed, but rather the pond infrastructure consisted of small numbers of small ponds, which were owned mainly by the nobility. Furthermore, the fish cultivated were usually not destined for the market (this seems to be a modern development), but for the landlord’s table.

Pond culture was well developed in the seventeenth and eighteenth centuries and this continued until 1861, when the Tsar’s emancipation reform in Lithuania and Poland ended the serf system. In the new economic order, rising labour costs led quickly to the ruin of pond culture and by the end of the nineteenth century most ponds in Lithuania were in a very poor state (Staniewicz 1902).

Modernisation of aquaculture

The upper class and the state initiated liberation of peasants from serfdom in 1816 in Estonia and in 1819 in Livonia. The manor owners were compensated with land in return for abandoning their right to own the peasants. In the middle of the century new agrarian laws were passed. This laid the foundation for the purchase of farms and the emergence of peasant landowners and peasants began buying farmsteads from the estates at free market prices (Raun 2001: 45ff).

In November–December 1905, the Czarist government declared a state of war in the Baltic provinces. Within one week (12–20 December), the bands of workers and peasants, mostly in northern Estonia, destroyed, burnt down or looted about 160 Baltic German manor houses (i.e. every fifth manor). After the Russian revolution in February 1917, Estonians were integrated into one autonomous Estonian national province (Raun 2001: 82ff).

During this time, there were estates with large ponds and fish farming was carried on. One of these was the Löwenruh (Roosna) summer estate, which had been restored in the mid-nineteenth century. During the restoration the grounds were landscaped and nineteen fishponds were constructed. The fish were sold to the markets in Saint Petersburg. The manor was destroyed in a fire in the 1880s but fish production continued although not as extensively as earlier. Anna Graf sold the estate (26 ha.) in 1936 and fish farming on the estate was abandoned (Tönuriste et al. 1976: 248).

According to Paaver et al. (2001), modern fish farming began in Estonia in the 1890s. They argue that it was German landowners who initiated farming of brown trout (*Salmo trutta fario*) and common carp (*Cyprinus carpio*) in ponds and developed it into a profitable branch of economy. Several trials were carried out by fish farm owners to improve the technology of pond farming. These trials included Staël von Holstein at the Antsla fish farm and Friedrich von Berg who owned the large Sangaste estate where he was experimenting with developing rye, potatoes, fish and horses, among other things. Berg wrote extensively about the problems of fish farming in ponds and his experience of solving them (Tohvert 1995).

Fish farming in Estonia more or less came to a halt from the period covering World War I to the end of World War II. (Paaver et al. 2001). That said, there are newspaper reports of some attempts to start fish farming, among them a salmon farming initiative in the pond “from the times of the barons” at Luke estate (*Postimees* 12.06.1935 nr. 157, p. 6). There was also a report that Professor Heinrich Koppel wanted to start fish farming in a lake at the Vissi Estate (*Postimees* 18.05.1935, nr. 134, p. 8.). Another attempt reported was an effort to start private fish farming of trout in the Elva Lakes (*Postimees*, 04.08.1934, nr. 210, p. 7, *Postimees*, 02.04.1935, nr.91, p. 6). All these endeavours ended with the onset of World War II and the occupation of Estonia by the Soviets.

Common carp is commonly farmed in contemporary Estonia. The largest fish farms are situated in the basin of the Emajõgi River, the Väike Emajõgi River and the Narva River. In 1990, which is considered to be the most productive year in Estonian aquaculture, 917 tons of carp were cultivated on fish

farms. However, after liberation from the Soviet Union many fish farms ceased cultivating, although it has become popular with many farmers to keep carp in small ponds (Ojaveer, Pihu and Saat 2003: 239–240). Some attempts have been made recently to use aquaculture to cultivate other species such as grass carp, *Ctenopharyngodon idella* and bighead carp, *Aristichthys nobilis*. The most important taxon of aquaculture in Estonia is the rainbow trout, although production of this species has decreased in post-Soviet Estonia (Ojaveer, Pihu and Saat 2003: 114, 175, 240).

In Lithuania, a new chapter in the development of pond culture opened late in the nineteenth century. There were two leading pioneers at that time. One important actor was Mykolas Girdvainis (Michał Girdwoyń) (1841–1925), a fishery and aquaculture specialist who had visited several distinguished European scientific institutions (Gečys and Lirski 2011). He became famous not only in Lithuania and Poland but also throughout Europe, as he was responsible for establishing over 400 pond farms. Most of the farms established in Lithuania at that time were under his supervision. The aggregated water area for pond infrastructure amounted to more than 10,000 ha.

Girdvainis began to work in the fishery sector in the 1870s. It is likely that he constructed a fishpond in Verkiai, near Vilnius, at that time. This pond was regarded as a pioneer of modern design in the country. He designed carp and trout ponds on the Tyszkiewicz family estate in Waka (Vokė), near Vilnius, in around 1880–1885. These ponds, which still exist, were the first trout ponds established in Lithuania. Trout were sent to market, mainly to Saint Petersburg and Warsaw, less so to Vilnius. After marrying in 1885, Girdvainis moved to his wife's estate in Iszliny in western Lithuania, where he set up his private, well-known fish farm. He continued his work in this sector until 1916, when almost all the fishery institutions and enterprises he had established were destroyed during World War I. He was also the author of an 1881 pond culture manual written in Polish.

The second key actor was Cezarijus Stanevičius (Cezary Staniewicz) (1839–1909) who held a PhD and was a physician and ichthyologist. He was the first chairman of the Vilnius Section of the Imperial Fisheries Association in St Petersburg, established on 21 February 1901 (Anonymous 1904) and continued in this position until his death. His interest in fish farming stemmed from the fact that as a physician he noted the lack of proteins in the diet of his countrymen. Early in the twentieth century, Stanevičius published several works on fish and fisheries in Lithuania, including a 1902 work on pond culture (Staniewicz 1903). These books are extremely rare today.

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Reference code EAA.995.1.6851 sheet 5; Wiems GenerL: GouverTZ: i Estland
Tafelgodz1689 Reference code EAA.1.2.C-II-35

Geometrische Chartre von dem publ. Guthe Falckenau und dem davon privat
gewordenen Theile Marrama 1783 Reference code EAA.2072.3.39c sheet 1;
Chartre öffwer den Stridigheet Emellan Payushoff Bänder och Ruttigferhoff
1690.EAA.308.2.209; Geometrische Chartre von dem im Rigaschen Gouverne-
ment, Dorptschen Kreise und Koddaferschen Kirchspiele belegenen privaten

Gute Chatrinenhoff gemessen und eingetheilt im Jahre 1811 und 1812
EAA.1809.2.274 sheet 1.



Figure 6.1: The Pirita monastery 1689 (EAA1.2.C-II-35)

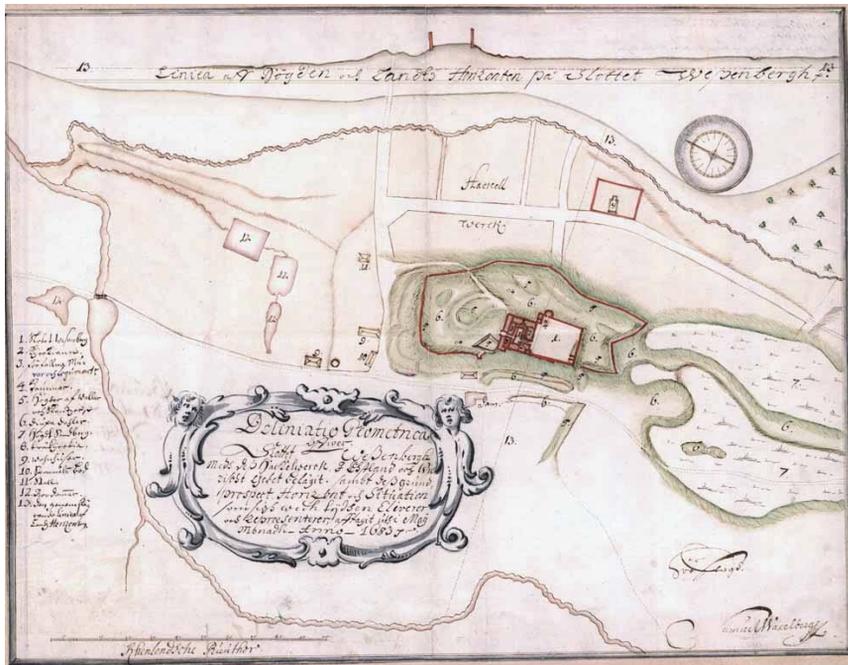


Figure 6.2: The castle of Wesenberg (Rakvere) had crucian carp ponds depicted on the map from 1683 (KA 0406.28.057.002).

