

Why

Water is life. Pools used to be dug to provide water for livestock, irrigate crops or, like flax straw pits, were part of ancient agricultural practices. With the advent of piped water, cisterns, basins and modern techniques, ponds lost that economic function. They were filled in or languished without proper management. What we lost sight of in the process is that the water in those pools was (and is!) also necessary for many plants, amphibians, insects and other animals.

As biodiversity is increasingly under pressure, it is therefore important to restore old cattle drinking pools or create new ones in suitable places. In many places they can once again fulfill their historical function as cattle drinking pools. More and more people also appreciate pools simply for their calming and inspiring effect or give them an educational purpose.

What

By a pond we mean a small, shallow body of water with sloping banks and little or no current. Because the water is shallow, sunlight reaches the bottom. This allows aquatic plants to grow and the water warms up quickly, which is favorable for the development of amphibians. Ponds are found in places where the soil is naturally wet due to a high water table or confluent rainwater.



How

Construction

No pond without sufficient and clean water. A pond is mainly fed by groundwater and (run-off) rainwater. If you have a wet or lower area on your property, this may be a good place to build a pond.

You can consult soil maps online to find out your soil type (www.geopunt.be – nature and environment – soil – Soil map: soil types), but to have a good idea of the local groundwater level, it is best to use a soil corer to look for soil rust or groundwater. The zone with rust color shows a fluctuating groundwater level. You then drill further in search of the gray (reduction) zone indicating permanent groundwater level. You ideally find this boundary at a maximum depth of 1.50m. You can then dig a pool 2m deep that will hold water during an average summer.

You can also monitor the well for several months to see the fluctuations of the groundwater level throughout the year, focusing on August/September, when the groundwater level is usually at its latest.

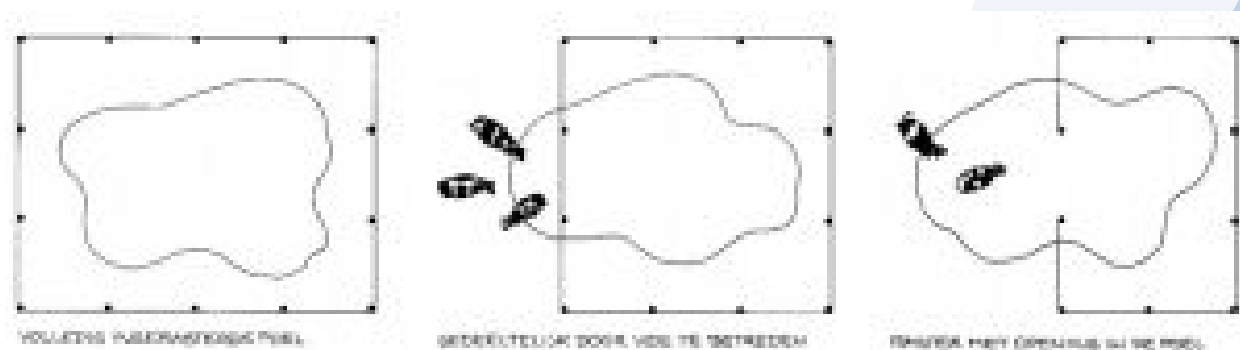
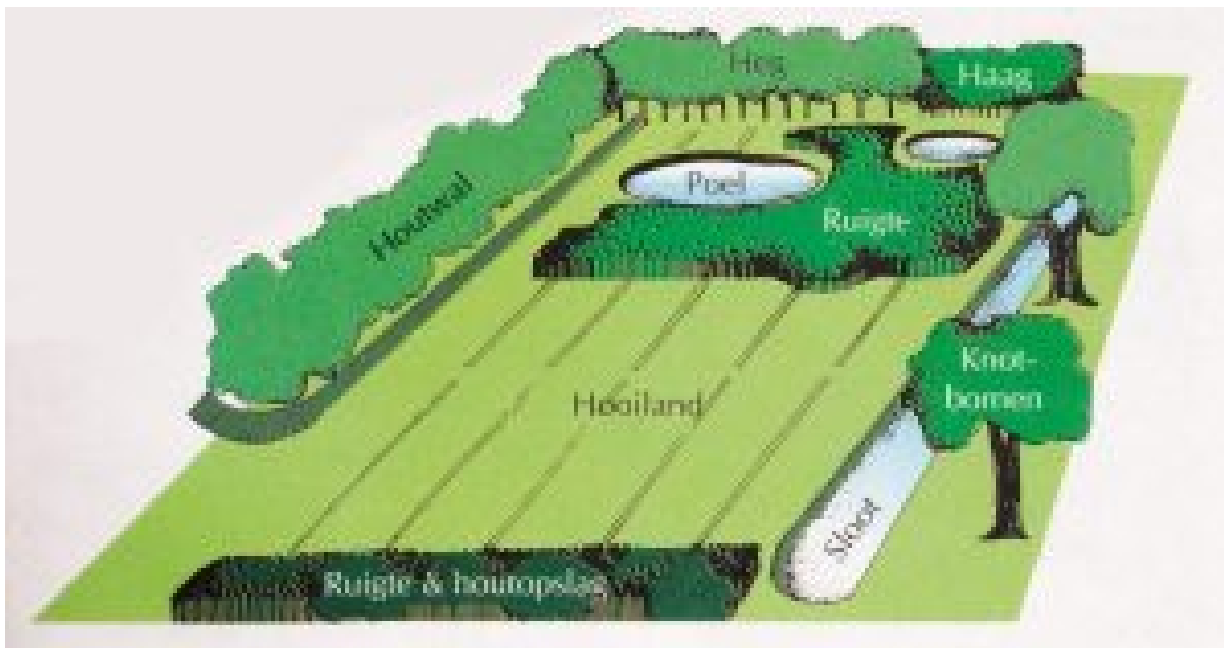




Gray reduction zone – permanent groundwater level Rust color – fluctuating groundwater level

Is presence of groundwater checked off, then you can see if the area around the pool is suitable. Amphibians use pools to reproduce, but “live” most of the year on land. Therefore, the environment of a pond must also meet some requirements:

- Small landscape elements (KLEs) in a radius of 200-500m, such as nearby pools from which species can migrate to the pool and hedges, wood edges, shrubs, orchards, groves where amphibians can find protection and food. You can also plant these yourself if the area is not yet suitable.
- Not too close to tall KLEs. Best keep a minimum 15m distance from trees on the west side of the pool (less leaf fall) and 25m on the south side (sufficient light).
- To maintain good water quality, your site is best located away from fertilized fields or has woody vegetation between them as a buffer. Streams can also carry polluted water to your pool. So it is best not to connect to surrounding streams or canals and keep a distance of 20 to 30m in case they flood.



Layout

Construction

You can determine the shape and size of your pool based on the available space and your needs:

- We recommend a water area of at least 100m². If you have the space, it is better to choose a size of 150m² to 200m². Larger pools are more varied and less vulnerable to drying out and siltation.
- The shape is best whimsical or eg in the form of a kidney, so you create more variety and riparian zone.
- The slopes of your pool should be gentle/faint (20° to 25°) so that a shallow riparian zone is created. This is especially important on the northern and western sides, as that is where the incidence of sunlight is brightest so the water warms up quickly in the spring as a spawning ground. Small mammals and amphibians can then also get out of the water more easily. The southern and eastern slopes may be steeper (30° to 40°), but they should not be. Therefore, because the slopes should not be too steep, you cannot make small pools as deep as large ones.
- The ideal depth of a pond is between 1.5m and 2m deep, 50cm below the measured lowest groundwater level to prevent drying out in summer and freezing in winter the.
- The bottom surface should also have an area of at least 2m².
- NO sealing/foil is needed in the excavated 'pit', groundwater will quickly fill the pool and in extreme drought, a pool may run dry once in a while (preferably not until late August in function of reproduction and not annually).
- It's best to let a pool evolve spontaneously. So don't put out fish, amphibians and aquatic plants, these will come naturally.
- In a cattle drinking pool, fencing off part of the pool benefits the (water) quality of the pool. This is because it prevents cattle from trampling all the banks and their droppings from entering the pool. It is best to fence the most valuable north and west banks so that biodiversity has a place here.

The excavated soil is best processed on your plot, which is the most cost-effective. You can spread it out locally, use it as backfill or incorporate it into a mound. Usually, spreading has the best long-term landscape results. However, in flood-prone areas, you may be required to drain the soil and that comes with a higher price tag.

In pond restoration, it's best to lay the excavated silt to dry for several days at the water's edge. This allows animals scooped up with it to get back into the water and reduces the excavated volume.

Time

The best time to dig a pool is late August to late September, groundwater is usually low then. If you rebuild a pool, it is best to dig from late September to late October, by which time most animals are no longer in their

reproductive period, but not yet hibernating in the pool.

Maintenance

- Remove storage and overhanging branches of trees and shrubs in and near the pond
- Mow the edges of the pool, leaving ^{1/4th} each time, and dispose of the clippings
- Remove invasive aquatic plants so that 50% of the area remains uncultivated
- Remove algae as best you can
- Remove fallen leaves or dead plants
- Remove silt every 5 years with a dredge bracket, crane or tractor. Ideally, spread the work over 2 years and clear half a pool per year (minimize disturbance).
- Place grass clippings, aquatic plants, leaves and silt on the bank for 1 day so animals get back to the pool

Tijdstabel: onderhoudsperiode



Cost

Target price

Target price

The cost varies depending on the pond area, distance for performing excavator/contractor, soil handling, inflation and the like. Guide prices are:

- Digging a pool: €1700 to €2000 excluding VAT.
- Removal of uncontaminated soil (digging pool): €30/m³^{VAT}

- Disposal of uncontaminated sludge (restoring pool): €40/m³^{VAT}

Subsidy

Through the VLIF non-productive investment aid (NPI), the digging of a pool can be 100% subsidized, provided that the pool area will be at least 50m². More information:

<https://lv.vlaanderen.be/nl/subsidies/vlif-steun/niet-productieve-investeringssteun>

Many Regional Landscapes offer support for pond construction. This can range from mere advice, to support in drawing up plans and permit applications, to subsidies. Contact your regional landscape for more info:

<https://www.regionalelandschappen.be/>.

Benefits

Economic

If you build a cattle watering hole, the main economic advantage is the saved cost of drinking water. In dry years, the animals drink a lot, water evaporates quickly and rainwater is not available, making a cattle watering hole a cost- and time-efficient solution.

If you host guests on your farm, a pool can add visual, educational and experiential value.

Ecological

The greatest gains are made in terms of biodiversity of aquatic plants and aquatic dependent species.

Ecosystem services

When constructing cattle drinking pools, you help reduce water scarcity during dry summers since the use of tap water is reduced.

The biggest gain will be in terms of biodiversity. The pond will provide additional habitat for aquatic plants and animal species that depend on the specific environment of a pond.

What to look out for

Legislation

Digging pools in many cases requires the application of an environmental permit, some general guidelines:

- For the construction of a (cattle drinking) pool smaller than 100m², no environmental permit is required in most cases
- Construction of a cattle drinking pool larger than 100m² requires an environmental permit for urban planning operations
- In agricultural areas of ecological importance or agricultural areas of special value (according to regional plan or RUP), an environmental permit for vegetation changes is (additionally) required, regardless of the size of your pool.
- Restoration of a pool to its initial state is usually permit-free as it is considered maintenance, if you expand the pool, it is best to apply for a permit

The permit process can take 4 to 5 months so apply for your permit on time.

The regional landscapes and municipality can further advise you on the applicable guidelines on your parcel.

Useful links

- [Advice \(and support\) on pond construction.](#)
- [Info construction and restoration of ponds](#)
- [Info management of invasive plants](#)
- [Amphibians and reptiles working group of Natuurpunt](#)
- [Courses on pond construction and maintenance](#)
- [Guidelines for construction and restoration of ponds](#)
- [Application for an environmental permit](#)
- [Digital maps of your plot and surroundings](#)
- [Grants](#)

Sources

- [POELEN, PARELS IN THE LANDSCAPE - A PRACTICAL GUIDE \(Province of Flemish Brabant, Provincieplein 1, 3010 Leuven- D/2020/8495/19\)](#)

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**Medegefinancierd door
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voor Plattelandsontwikkeling:
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This sheet has been prepared in the framework of the PDPO project 'KLIMACO – Climate coalitions in the Mechelen Green Region' (2021-2023). The project was carried out by POM Antwerp, Province of Antwerp, Vegetable Experimentation Station, Regional Landscape Rivierenland, Boerennatuur Vlaanderen and Pidpa, with the support of the European Agricultural Fund for Rural Development: Europe invests in its countryside, and the municipalities of Rumst, Kontich, Sint-Katelijne-Waver, Duffel, Lier and Putte.

The ACLIMA-project has received funding from the LIFE Programme of the European Union under contract number LIFE 20 CCA/BE/001720.

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

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Examples

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This sheet is the version of 18/10/2026