PST08 - Ponds as a water resource in the Swiss Jura Mountains: For cattle and for biodiversity

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Networks of ponds host a particularly important biodiversity (number of species and number of threatened species). Most ponds of our present landscape are nevertheless man-made, with a construction often linked to economic or social targets. This is the case for agricultural ponds, particularly those in the Swiss Jura Mountains, whose primary function is to accumulate rainwater and runoff, which can subsequently be used for livestock watering. This type of artificial waterbody, however, reveals also a potential for biodiversity conservation. Aware of this duality of values, the local managers (*Parc Jura Vaudois)* try to conserve and to promote these ponds. Three new water reservoirs have therefore been built recently (2010 to 2014) at altitudes of 1000 to 1450 m.a.s.l., in a landscape characterized by extensive pasture, but also partly by forest. The construction distinguished two separate waterbodies: (i) one central pond with the largest volume, designated to provide water in drinkers situated downstream, (ii) a lateral pond (with a "banana" shape) designated to host biodiversity.

A survey of the biodiversity was conducted in 2015 and 2016 and demonstrated that these young systems are already attractive for the Fauna. The colonisation was without surprise more rapid for active colonisers (e.g. Amphibians, Dragonflies, and water Beetles) than for passive colonisers (e.g. aquatic plants, Molluscs). Among the successful colonisers: two boreo-alpine dragonflies, *Aeshna juncea* and *Coenagrion hastulatum*. These two taxa are threatened by climate warming in this area, as they are at the lower boundary of their altitudinal range and as nearly no other waterbodies exist at a higher altitude (the Jura Mountains culminate at 1720 m.a.s.l.). Three amphibian species colonised the waterbodies, and among them the common toad (*Bufo bufo*), a species classified on the Swiss red list. Many insects with winged adult stages (active colonisers) were also present in abundance, in particular the water Beetles and water Bugs.

Aware of these first encouraging results, a larger investigation has started in 2017, focussing on the promotion of these ponds to farmers. Through a comparison of this new type of water reservoir with classical reservoirs, we aim at demonstrating their enhanced ecosystem services: a large water volume of good quality for cattle, together with a valuable biodiversity.