Report on Norway visit in 2013 by Daniel Palm (E5)

Background

One important matter to evaluate is whether constructed spawning beds will increase brown trout (host for freshwater pearl mussel) abundance or not. To evaluate this, knowledge of brown trout embryo survival in spawning beds is crucial. There are different techniques to evaluate embryo survival. One technique that we found suitable for the demonstration sites was the use of incubators (small boxes placed inside the spawning bed). This technique is widely used in southern and western Norway in Atlantic salmon recolonisation projects in former acidified rivers.

The trip

To learn more of and to get experience from the technique Daniel Palm visited two rivers in southern Norway (Nid River and Stor River) 12-14/3/2013. He joined staff (e.g., Jim Gutturp, head of fieldwork) from the Norwegian Institution for Water Research (NIVA) and spent one day in the field, at Nid River at two different sites. Totally 60 000 salmon eggs in incubators were planted in the sites in Nid River. The evening was spent visiting egg planting sites at Stor River to get better knowledge about were planting sites are best located. For this trip, Daniel Palm had to rent a car and spend one night at a hotel in southern Norway.

Description of the method

At fertilization of trout or salmon embryos (Oktober) or at the eyed age stage (April) eggs are retrieved from a hatchery. In both Oktober and April working conditions along rivers can be hard with ice and cold temperatures (Pic. 1). Different types of boxes can be used to prevent hatched fry to leave the spawning bed. Here a WitlochVibert box is used (Pic. 2). The box is filled with spawning gravel and a known number of embryos (eggs) are gently poured into the box. The box is closed and then buried in to the lager box and finally covered with gravel and placed into the water (Pic. 3). At time for emergence (May-June) the small box is retrieved and the number of dead vs. live fry can be counted. This generates exact data on survival during the intra-gravel stage.

Picture 1.

Picture 2.

Picture 3.

Vindel River LIFE demonstration sites

During Oktober 2013, Daniel Palm and Annika Holmgren placed out 40 incubators in 14 different spawning beds at the demonstration site in Beukabäcken. Instead of planting in large boxes of gravel we planted our incubators in constructed spawning beds. The incubators we used hade a slightly different design compared to the WitlochVibert box. The trip to Norway and gained knowledge and experience made this field work very successful. The incubators will be retrieved in May/June 2014.