Seminars in Zoophysiology at Aarhus University

Fish physiology at the nuclear power plant: a life at high temperature

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Global warming profoundly impact ectothermic animals, such as fish, where body temperature and metabolism are directly affected by ambient temperature. To study whether insufficient oxygen transport is a primary limitation at elevated temperature, we study cardiovascular and respiratory function of Eurasian perch that live and reproduce in water chronically heated by 5-10° C by a nuclear power plant in the Baltic Sea. Because other abiotic conditions are not different, this experimental site presents a unique opportunity to study the physiological responses to chronic warming in a wild fish population. Chronically warm fish are considerably more tolerant to acute temperature increase and better to maintain cardiac function during acute thermal challenges. Although their hearts are smaller. In addition, they have a depressed metabolic rate and a lower resting heart rate due to a higher cholinergic tone and reduced intrinsic cardiac pacemaker rate..

Friday March 22nd at 10.15
Room 127 (zoofys kaffestue), building 1131