

## **Abstract**

### **Rehabilitation Failures of Oil-Covered Birds in Care Centers: Effects of Refeeding on the Digestive Tract, the Body Energy Stores and the Immune System**

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During oil spills thousands of seabirds suffering from hypothermia, cachexia and from the toxicological effects of petroleum may arrive in care centres. Only few of them are released in the wild, and the causes of rehabilitation failure remain poorly understood. Because some of the birds fed in care centres continue to lose weight, the hypothesis of an irreversible atrophy of the digestive tract has been proposed. We checked the validity of this hypothesis in Common Guillemots (*Uria aalge*) oiled covered after the Napoli oil spill in January 2007. We used birds considered as non viable because their body mass was below an empirical lethal threshold level. Birds were euthanatized either while fasting for few days at the arrival in the care centre or after being fed with sprats. The digestive tract and indicators of body condition (pectoral muscle and skin) were sampled and analysed, and natural antibodies and immunoglobulin concentrations estimated. Even in these birds considered as non viable, the digestive tract presented signs of functional restoration after only one day of refeeding. Moreover, within some days of refeeding, guillemots may be able to regain weight and to restore partially the lost body reserves (muscular proteins and lipids). Nevertheless the immunological parameters remain at a low level compared to those of non-intoxicated birds. As a conclusion, the initial hypothesis of an irreversible atrophy of the digestive tract does not seem to be verified and immune system depletion as a possible cause of rehabilitation failures is discussed.