

## **S1 File. Gizzard mass measurements**

Gizzard size of each bird was measured within one day after catch, and every third day during both series of trials. They were measured non-invasively by AD and TO with an ultrasound apparatus (model Aquilla, Pie Medical Benelux, Maastricht, The Netherlands), according to the procedure described in Dekinga et al. [1]. The observer did not know to which experimental group each bird belonged. Height (H) and width (W) were always measured twice and both averaged. Average H and W were transformed to gizzard mass ( $G$ ) by the formula  $G = -1.09 + 3.78HW$ , derived in a calibration study on 29 dead red knot bodies with variable gizzard masses (A.D., unpublished data). Gizzard mass estimations did not differ between AD and TO when repeated by both observers ( $n = 35$ ). The slope of the major axis regression (function “sma” in R package “smatr”) did not differ from 1 (95% CI [0.96,1.66],  $r = 0.28$ ,  $p = 0.1$ ) and the elevation did not differ from zero (95% CI [-4.97,0.48],  $t = -1.6$ ,  $p = 0.1$ ). Gizzard mass on each day was modelled for each bird with a polynomial model, fitted to all measurements (function “loess” in the basic package in R,  $\text{span} = 0.5$ ).

## **References**

1. Dekinga A, Dietz MW, Koolhaas A, Piersma T. Time course and reversibility of changes in the gizzards of red knots alternately eating hard and soft food. *Journal of Experimental Biology*. 2001;204(12):2167-73.