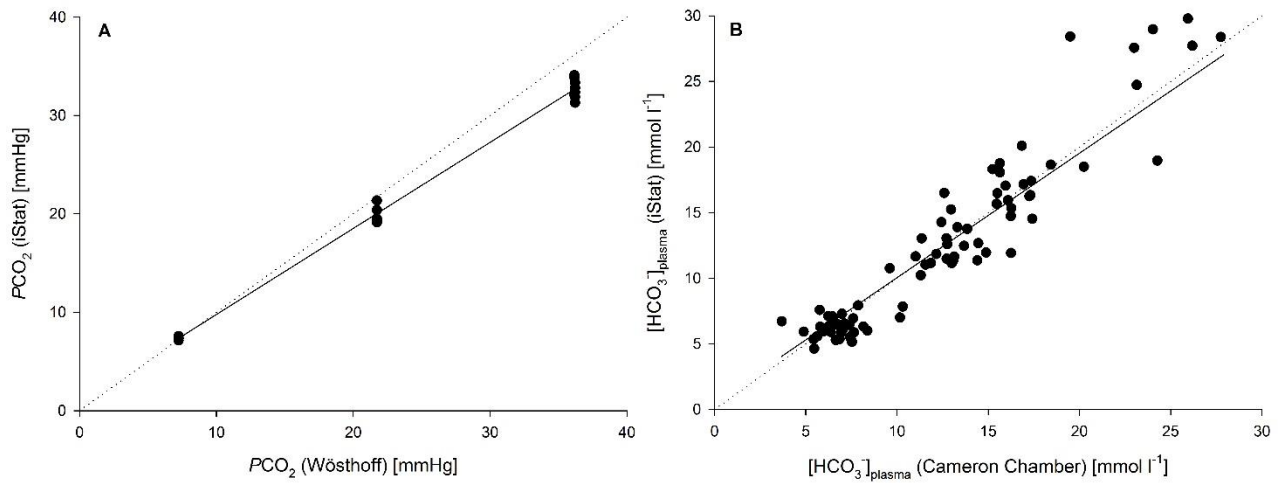


**Fig. S1. Physical and chemical conditions of Vietnamese *Pangasius* aquaculture ponds.** Water partial pressure of carbon dioxide ( $P_wCO_2$ ) (A), pH ( $pH_w$ ) (B) and partial pressure of oxygen ( $P_wO_2$ ) (C) at different depths of Vietnamese *Pangasianodon hypophthalmus* aquaculture ponds with 30-50 g fish (filled circles) and with 400-1000 g fish (empty circles). Data are means  $\pm$  s.e.m. ( $n=6$ ).



**Fig. S2. Verification of  $PCO_2$  and  $[HCO_3^-]$  from iStat.** A: Correlation between true  $PCO_2$  in a blood sample and the  $PCO_2$  measured by the iStat. Equation for linear least squares regression is  $P_aCO_2$  (true) = 1.03 + 0.875  $P_aCO_2$  (iStat),  $F_{1,16}=2992$ ,  $P<0.001$ ,  $r^2 = 0.99$ . Solid lines indicate the line for linear least squares regression and dotted lines indicate line of identity. B: Correlation between  $[HCO_3^-]_{\text{plasma}}$  measured using the method from (Cameron, 1971) and using the Henderson Hasselbach equation applying  $pH_e$  and  $P_aCO_2$  from iStat, temperature compensated  $\alpha_{CO_2}$  from (Boutilier et al., 1985) and  $pH_e$  compensated  $pK$ . Equation for linear least squares regression is  $[HCO_3^-]_{\text{plasma}}$  (iStat) = 0.56 + 0.95  $[HCO_3^-]_{\text{plasma}}$  (Cameron Chamber),  $F_{1,81}=476$ ,  $P<0.001$ ,  $r^2=0.85$ .