Tolerance to brackish and fresh water bodies as habitat in oceanic sea skaters of *Halobates* (Heteroptera: Gerridae)

Takero Sekimoto[1], Koki Iyota[1], Sam Wouthuyzen[2], and Tetsuo Harada[1]

[1]Laboratory of Environmental Physiology, Kochi University, Japan, [2]Research Center for Oceanography, Indonesian Institute of Sciences, Indonesia

Experimental adult specimens of four species of oceanic sea skater, *Halobates* were placed in one of 4 salinity conditions [sea water(35-36‰), sea water : fresh water= 2:1(23-24‰), sea water : fresh water = 1:2(11-13‰), fresh water(0‰)] 8 hours – 10 days after collection from the Domini Gulf of Indonesia (0°15'S-0°44'S, 120°00'E-121°30'E), temperate and tropical Pacific Ocean (30º00'N-5˚38'S, 144º30'E-162º06'W) and tropical Indian Ocean (04º09'S-10º39'S, 094º26'E-079º18'E). The specimens were checked to see if they were alive every 2 hours continuously until all adults had died.

Paralysis from fresh water shock occurred in all specimens and dead within 2hrs. However, specimen from the Domini Gulf were paralyzed in 20-30hrs on average and much more resistant to "fresh water" than those from Pacific and Indian Oceans (2-9hrs for paralysis) (Mann-Whitney U-test: $p<0.001$). The results of this study imply that the higher influence of fresh water from rivers might be related to the higher resistance to fresh water for the specimens of sea skaters inhabiting the Domini Gulf. Highest fitness on 1/3 or 2/3 sea water might be an adaptation by oceanic sea skaters to occasional rain fall on the water film.