In the gas phase, HF$_2^-$ is a hydrogen bonded species with a linear FHF geometry. The F-H distance is short and the hydrogen bond is strong. In the aqueous phase, it is known that the hydrogen bond in HF$_2^-$ is weakened due to hydrogen bonding between HF$_2^-$ and water molecules. We have examined the effect on the hydrogen bond in HF$_2^-$ due to hydrogen bonding between HF$_2^-$ and a single water molecule. For the HF$_2^-$-H$_2$O complex we have calculated geometries and vibrational frequencies for the equilibrium structure and several transition state structures. We find that the equilibrium structure is a mere 0.2 kcal/mole below the transition state structures indicating that the complex is highly fluctuational. We further find that whereas the F-H distance increases for the F atom hydrogen bonded to H$_2$O, the other F-H distance decreases. The F-F distance is essentially unchanged and the linearity of the FHF geometry is strictly maintained.