



Figure 2.6. A $pH - p\{H_4SiO_4\}$ thermodynamic stability diagram among some of the major silicate mineral phases on the Earth's surface. The gray area is the location of seawater pH and silicate concentration. Notice that the minerals predicted to be stable are those enriched in cations, such as the mixed-layer illite-montmorillonite clay minerals and microcline, rather than the less cation-rich kaolinite. The percent scale is the relative mixture of illite in the illite-montmorillonite solid solution. From Helgeson and Mackenzie (1970).