Accreting pulsating white dwarfs that occur in dwarf novae have the potential to serve as a convenient laboratory to explore the heating and cooling of white dwarfs if they are observed before and after a dwarf nova outburst. The timescales involved are months to years versus the millennia for evolutionary cooling of a single white dwarf. But out of the thousands of known dwarf novae, only 18 are currently known to contain pulsating white dwarfs. While the first object (GW Lib) was found in 1998, most were discovered between 2004-2012, with the last one in 2017. Of these 18, only a few have been followed over long periods of time and the results show a wide range of behavior, sometimes in accord with pulsation theory expectations and other times showing transitions that are unexpected or unrelated to outbursts. A summary of what observations have shown and are needed in the future and where theory is needed to understand the observed phenomena will be presented.