The earliest signs of activity beneath Eyjafjallajökull were seen in 1992, when stations were added to the automatic, highly sensitive, national digital seismic network in Iceland. Earthquake swarms in 1994 and 1999 were followed by surface deformation around Eyjafjallajökull, as measured by campaign GPS and InSAR observations. An additional earthquake swarm, without crustal deformation, was observed in 1996. From 2001 to 2004 increased seismicity and crustal deformation was observed beneath Mýrdalsjökull. In 2009, seismicity resumed beneath Eyjafjallajökull, with deep earthquakes followed by ground deformation and further seismicity during the summer. By end of 2009, earthquake activity continued and, by early 2010, deformation rates accelerated. On 3 March seismicity increased markedly, followed by a flank eruption that persisted from 20 March to 12 April. Late on 13 April, an earthquake swarm was detected beneath the summit of Eyjafjallajökull. From tremor measurements it was apparent that a subglacial eruption was beginning. The ~150 m deep summit caldera was ice-filled, prompting local evacuations due to flooding hazards. The summit eruption went through different phases marked by distinct seismic characteristics. The first phase, when meltwater was abundant, was phreatomagmatic. The second phase, had less ash production and soon lava started flowing from the caldera. In early May, after a swarm of deep earthquakes, the eruption intensified with heavy ash fall during the next two weeks. On 21 May the activity ceased, except for occasional ash and steam emissions. This presentation will focus on the forecasting and monitoring of both eruptions.