The 1990’s witnessed an explosion of wavelet-based methods in the field of image processing. This paper focuses on wavelet-based image compression. It describes the connection between wavelets and vision and how wavelet techniques provide image compression algorithms that are clearly superior to the present JPEG standard. In particular the wavelet-based algorithms known as SPIHT, ASWDR, and the new standard JPEG2000, are described and compared. This comparison shows that, in many respects, ASWDR is the best algorithm. Applications to denoising are also briefly referenced and pointers supplied to other references on wavelet-based image processing.