Figure Design Consideration for Publication

I received the following instructions on the best way to prepare figures for publication from one of the editors (Liana Holmberg) at PLoS: Biology. This information is quite useful as a general guideline because if you have a better understanding of how to prepare your figures out the outset there will be fewer unpleasant surprises in reviewing proofs, or worse, seeing problems in print.

        Hope it helps,

           Tony

For offset printing (basically anything off a printing press), the type of image determines the minimum resolution requirement. While this will vary from one printer and magazine to another, here are some basic guidelines that may help you in your work. (Note that dpi and ppi may be considered interchangeable here.)

Line Art   1200 dpi
Artwork with only black and white lines, shapes, and text. No shades of gray, grayscale fills, or other gradients.

Line Art with Color   >300 dpi, preferably ~1200 dpi
Line drawings and drawings with black text that use colors to fill in areas or colored lines or text. These are tricky because the printer's process will vary quite a bit. Best bet is to produce these at a high resolution, say ~900 dpi.

Halftones   300 dpi
Any image that has a gradual shift in values and tones, including b&w or color photographs, gradient fills in what otherwise seems to be line art, any artwork with subtle shading.

To answer your specific questions (line art):
Yes, a 1200 dpi scan of a clean, sharp print out is sufficient. In order to keep the file size down, consider sizing the figure to the actual size the journal would print it at by checking the column widths used in the journal. Your figure will usually run at 1, 2, or 3 columns. You can also check at this stage to see that your text is still legible once the figure is reduced to publication size!

I also asked about RGB versus CMYK type figures. You often have a choice when first making a figure about which way to go but sometimes conversion between the two color schemes doesn't work well. You may want to check with your specific journal before starting. RGB measures light levels and CMYK describes ink levels. On-line journals may prefer RGB over CMYK, but it is journal dependent.