> Sorry, had to reform zall into zall1 because of the first where statement.

Then I think this should still work, unless I misunderstand what you are trying to do...

keep_indices = where((zall[*,*,1,j] ne -32768.0) and (zall[*,*,1,j] gt 10),
COMPLEMENT=lost_indices)

Depending on what your purpose is, you might not even need to loop over j. You could just do

keep_indices = where((zall ne -32768.0) and (zall gt 10), COMPLEMENT=lost_indices)
zall[lost_indices] = !values.f_nan