Stage-I Performance Improvement

Stage-I Code Performance Improvement Suggestions:

1.) Use pointers to CLM internal data:
There's code in csm_share for a performance improvement of using pointers to the CLM internal data rather than having a separate copy for ESMF import and export states and having to copy in/out on each call to CLM. To do this you check out the CLM branch (esmfStageI_clm3_expa_69) and go to
cd src/main
edit lnd_comp_esmf.F90
change setup_states

```
From
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_x2l_fields,   &
                                    eState=x2l_l )
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_l2x_fields,   &
                                    eState=l2x_l )
To
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_x2l_fields,   &
                                    eState=x2l_l , UsePTR=.true.)
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_l2x_fields,   &
                                    eState=l2x_l , UsePTR=.true.)
```

then modify lnd_comp_convertImport and lnd_comp_convertExport to set the pointers for each field using eshr_estate_setDataPointer and only call them once at initialization. lnd_convertImport also has some work that needs to be called every run step that operates on internal data types. So this would need to be converted into a subroutine and called each time lnd_run is.
Doing this will make about a 1% speedup for ESMF and also reduce memory usage.
2.) Improve memory efficiency of copy in atm import/export
The other performance improvement I'd like to do is to make the copy in atm_comp_esmf.F90 for import/export state data memory efficient.
3.) Get IS_NEEDED logic working
And the final one is to get the isNeeded logic working so ONLY the data needed for coupling is actually copied,transferred, and redistributed. The import states do this. But, it also needs to be put in the export states. On creation the export states should set all data to NOTNEEDED
Do this by changing the export setup state calls from

```
From
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_l2x_fields,   &
                                    eState=l2x_l )
to
  call eshr_estate_init2DFromList(  eGrid, FieldList=seq_flds_l2x_fields,   &
                                    eState=l2x_l , notNeeded=seq_flds_l2x_fields)
```

then the mergers need to set their input data to NEEDED, and the mappers pass this info along as well at initialization.
Once that is done, the eshr_estate_mod.F90 code can turn make use of this by changing

```
From
  logical,            parameter :: OnlyUseNeededData = .false.
To
  logical,            parameter :: OnlyUseNeededData = .true.
```

You may also need to be able to handle the case where no data is transfered – so mappers and mergers (especially for Ocean) may need to be modified for this case as well.
4.) Motivation for getting the improvements in:
If we don't get these improvements in – ESMF is likely to be worse than MCT – on all fronts. But, with them – I think we are likely to see a performance improvement over MCT in both time and memory usage. It also takes full advantage of ESMF functionality and provides a service to the CCSM modeling community.