

# PRACTICE EXERCISE

## CHECKING SEQUENCE AND CLONE COVERAGE

Consed can be used to do a rough check of both sequence and clone coverage levels across assembly sets.

The following exercises will use Consed. Please move to the appropriate directory by executing (from your home directory):

```
cd AssemblyData/BAC/scratch/edit_dir/
```

### Sequence Coverage

Find regions of low sequence coverage in the sample BAC assembly set.

1. In Consed, open Contig 4.
2. Using the Navigate menu, select 'Regions covered by only 1 subclone...'
3. In the pop-up window, double-click on each entry to view that region.
4. How is the sequence quality?
5. Do you think more sequencing is required?
6. Next, using the Navigate menu, select 'Regions covered by only 1 strand and 1 chemistry'.
7. In the new pop-up window, double-click each entry to view that region.
8. How is this selection different from the regions covered by only 1 subclone?
9. Is the sequence quality high or low?
10. Do you think more sequencing is required?

Now, find low coverage regions in other contigs in the assembly set.

## Clone Coverage

Find regions of low clone coverage in the sample BAC assembly set.

1. From the Options menu in the main Consed window, select 'Edit Consed/...'
2. Find the option called 'MaxInsertSizeOfASubclone'. Ensure that the current value equals the default value (3000).
3. Dismiss the Edit Parameters window.
4. In the main Consed window, click on Assembly View.
5. Use the 'What to Show' button to ensure that the 'show consistent fwd/rev pair depth' option is toggled on.
6. In the Assembly View, note the mainly green histogram above each contig. This histogram shows the clone coverage depth.
7. Note sections of the histogram that drop to zero and turn red. These are regions lacking clone coverage by valid mate pairs.
8. Use the Zoom buttons to navigate the Assembly View to get a better idea of the coordinates of each area.

Next, let's see what happens when we adjust the allowable clone size.

9. In the main Consed window, from the Options menu, select 'Edit Consed/...'
10. Change the 'MaxInsertSizeOfASubclone' value to 4000. Save this change.
11. Close Consed and restart it.
12. Click on Assembly View and continue from step 5 above.
13. Note the differences between the two clone size options.