

## Exercise 4 Chris Kendall's simulation movies: carbonates

You should allow about 30 minutes to complete this Exercise. You will need access to the World Wide Web and some coloured pencils.

Chris Kendall at the University of South Carolina, USA, has constructed a number of movie simulations of different depositional sequences which he has made available on his website:

<http://www.geol.sc.edu/kendall/TestMovie.htm>

Once you have downloaded any of the simulation movies within your web browser (to do this you need to click on the image), it is possible to run and pause the movie to see how the different packages build up in the cross-section and on the sea-level curve. It is also possible to copy the movie files onto your desktop, so that you can view them at a later stage without having to go via the web.

Using the movie simulation entitled '9. Repeated uniform cycles of sea-level and carbonate input' part of which is reproduced in Figure 4.1 (up to time step 35 (22.5 Ma) – see top right of movie), complete the following questions:

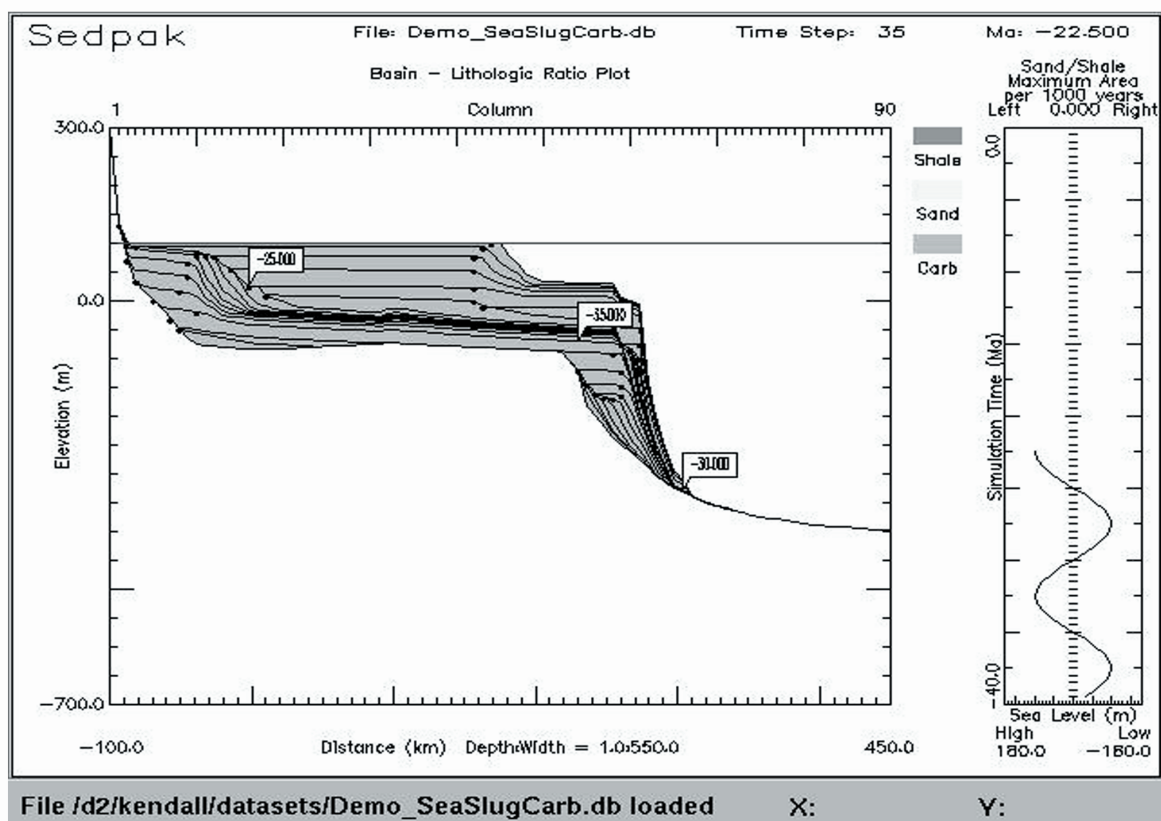
**Question 4.1** Run the movie through 35 time steps (using the arrow key on the right-hand end of the control bar, time steps shown near the top right).

(a) What type of carbonate platform is illustrated?

(b) What facies do you think the black dots within the blue might represent? (Ignore the black dots at the far left-hand end of Figure 4.1.)

**Question 4.2** Bearing in mind the answer to Question 4.1, shade Figure 4.1 to show all of the systems tracts and key surfaces in time steps 1 to 35.

**Question 4.3** At which time steps does the reef crest facies move a large distance in: (a) a proximal direction; (b) a distal direction; and why?



**Figure 4.1** Part of the simulation movie '9. Repeated uniform cycles of sea-level and carbonate input', from Chris Kendall's website.