

Jurassic Coast Fieldtrip

Field trip leaders: Mike Simmons (Halliburton) and Howard Johnson (Imperial College, London)

Dates: Monday 3rd June 2019

Logistics: Note that the field trip will begin in Weymouth (car park of the Best Western Rembrandt Hotel) and will end at the London ExCel Centre (conference venue). Participants are responsible for their own travel to Weymouth and overnight accommodation as needed.

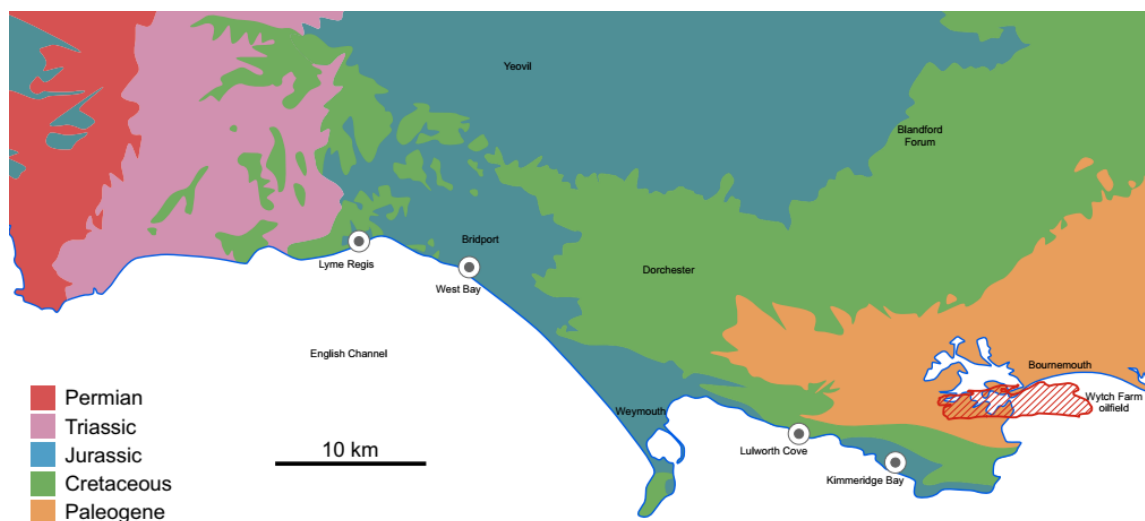
Transport to and between field trip localities and to the London ExCel centre will be by coach.

A full safety briefing will be given at the beginning of the trip along with a risk assessment. Hard hats and reflective vests will be provided. Participants are responsible for bringing their own field boots and other field equipment (waterproofs, etc). Do not bring hammers as hammering is forbidden at all localities since they are Sites of Special Scientific Interest.

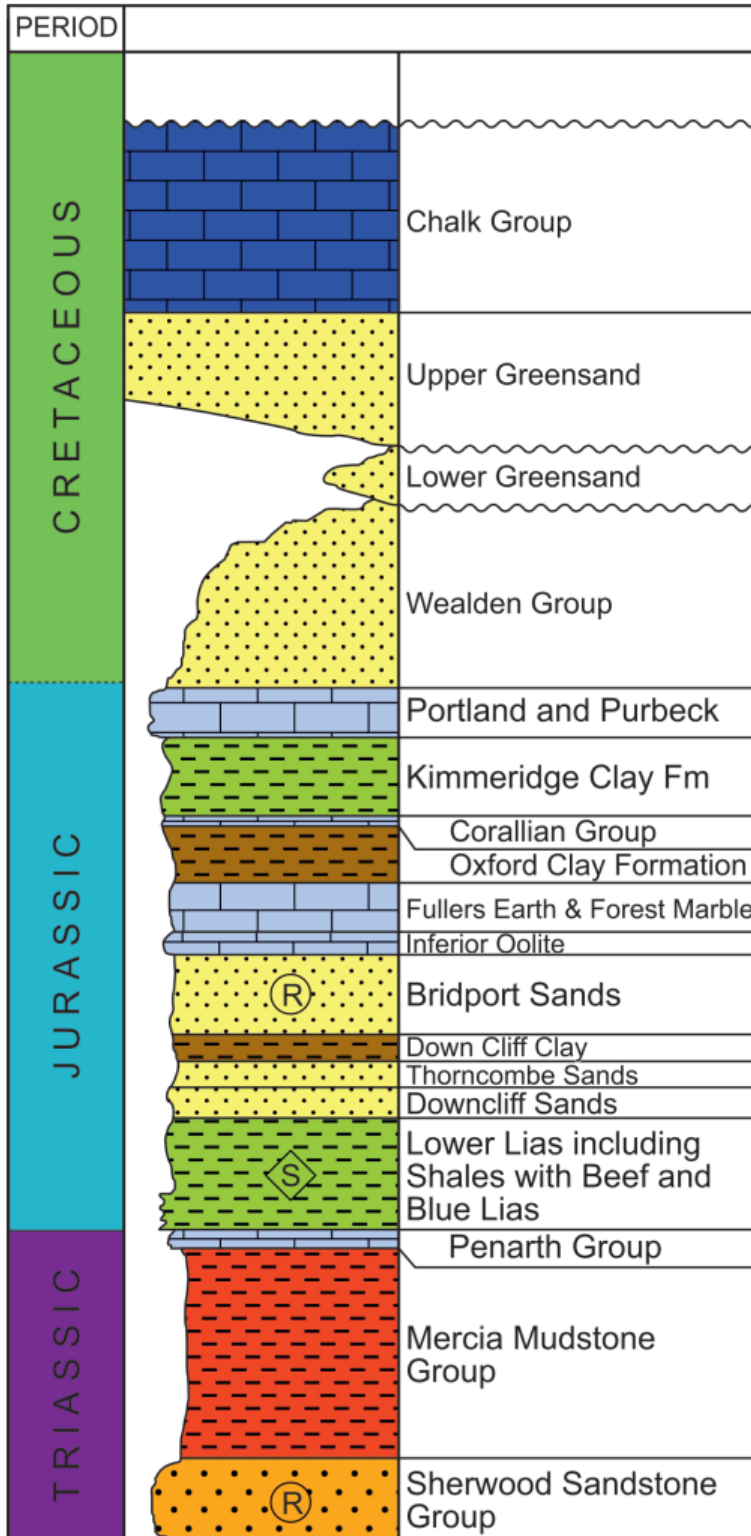
A short field guide will be provided.

Overview

The geology of the Wessex Basin exposed along the coast of Dorset represents a classic study area for stratigraphy, sedimentary geology and palaeontology. It is also a region that contains a major oil field (Wytch Farm) and exposes the rocks that make up the petroleum system that lead to the presence of oil and gas in the subsurface. We will take a look at some classic outcrops and identify those features which have significance in locating and producing subsurface hydrocarbons. We will also discuss depositional setting of the rocks we encounter and the controls on cyclicity observed and the tectono-stratigraphic evolution of the basin.



Simplified geological map of the Wessex Basin with field trip localities indicated.



Stratigraphy of the Wessex Basin

Field Trip Agenda

0800 Depart Weymouth

0830 Arrive West Bay

0930 Depart West Bay

1000 Arrive Lyme Regis

1130 Lunch (Lyme Regis)

1230 Depart Lyme Regis

1330 Arrive Lulworth Cove

1500 Depart Lulworth Cove

1530 Arrive Kimmeridge

1700 Depart Kimmeridge

2000 Arrive Excel Centre London

Outcrop Summaries

West Bay



Spectacular exposure of the Early Jurassic Bridport Sands, the secondary reservoir in the Wytch Farm oil field and an important carrier bed. We will study reservoir heterogeneity issues in association with depositional setting and diagenesis.

Lyme Regis



World-famous exposure of the Blue Lias (Early Jurassic) shales. These form the primary source rock in the basin and also yield spectacular fossils. We will discuss the reasons for organic enrichment and the cyclicity evident in the succession.

Lulworth Cove



The Late Jurassic – Cretaceous is exposed here along with spectacular evidence of Tertiary structural deformation. Critical here is the evidence of a phase of Early Cretaceous rifting, the sedimentary fill of which, drives source rock maturation and migration.

Kimmeridge Bay



The Kimmeridge stage is widely associated with source rock deposition in many basins of the Northern Hemisphere, and here at the type locality from which the stage took its name, the rocks are organic-rich although not mature. Depositional setting and cyclicity will be discussed as well as resource play potential. If time permits, we will visit the internationally renowned Etches Collection of fossils from the Kimmeridge Clay.