

Fig. 4.8: (1) Srsx 0.005-0.05 m (Sr)

Key Facies Information

Colour	Light grey/green (Weathered surface)
Grain-size	Medium to coarse-grained sandstone
Sorting & Texture	High sphericity; sub-rounded/rounded; well/very well sorted
Set Thickness	0.01 - 0.02 m
Facies Association	Bar top
Architectural Elements	Channel (Fill)

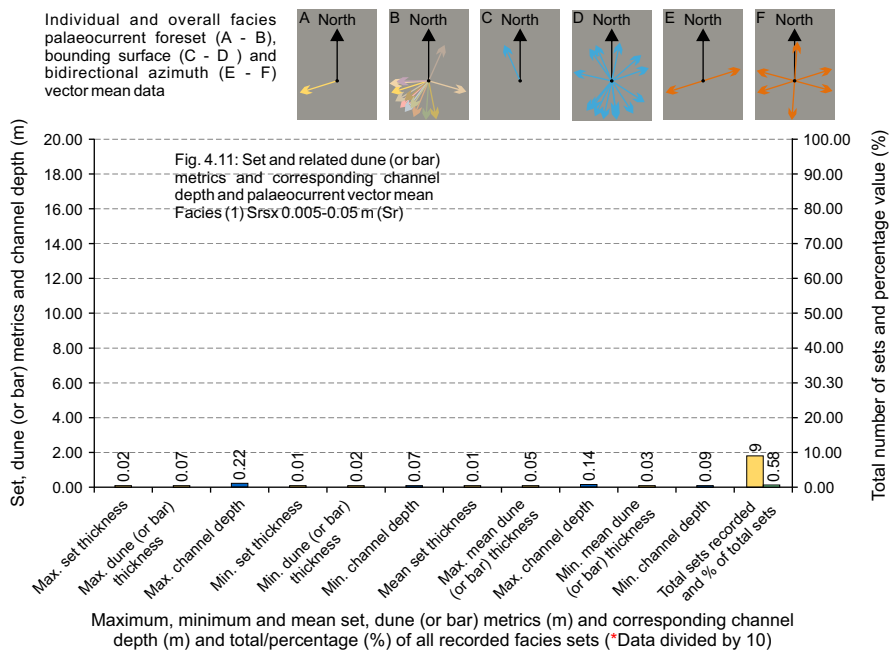
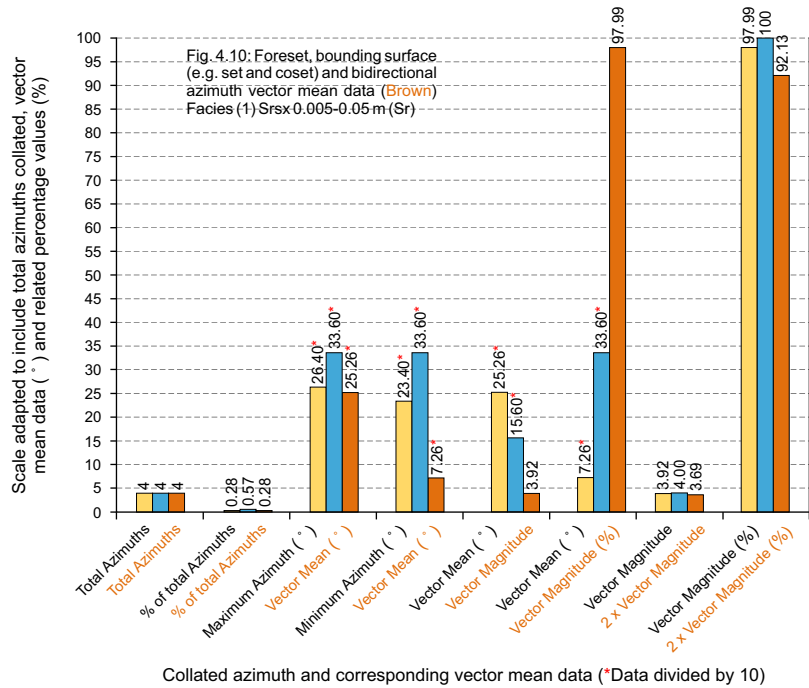
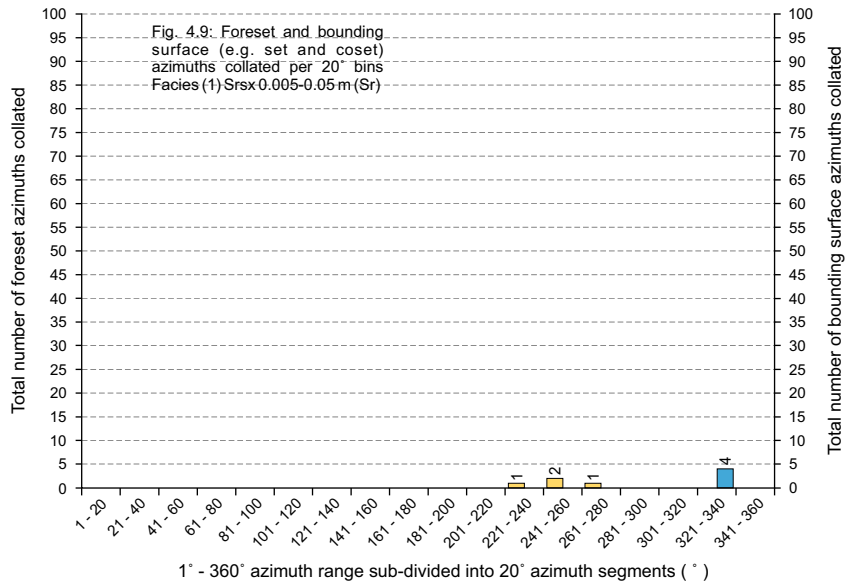
Key Facies Characteristics

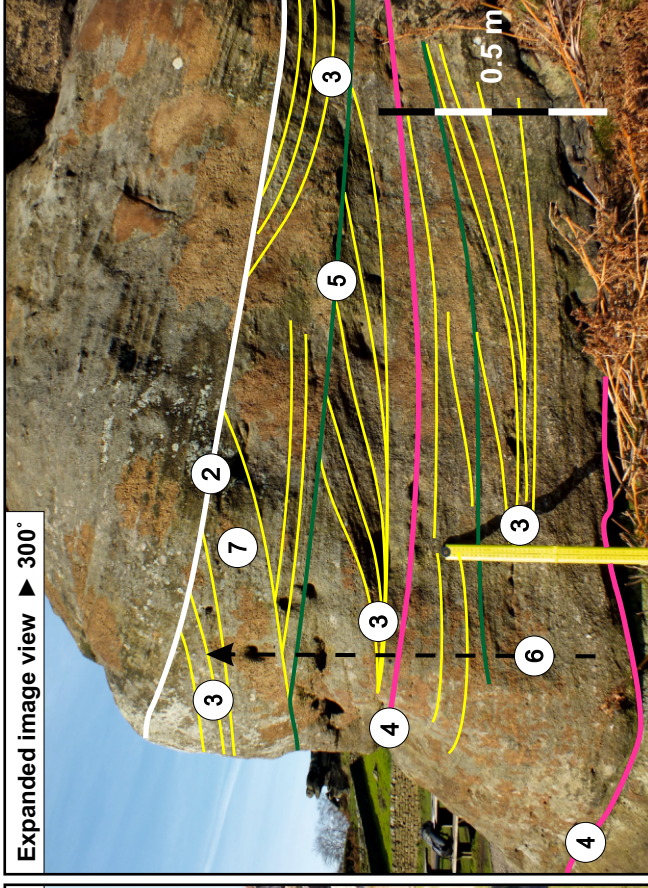
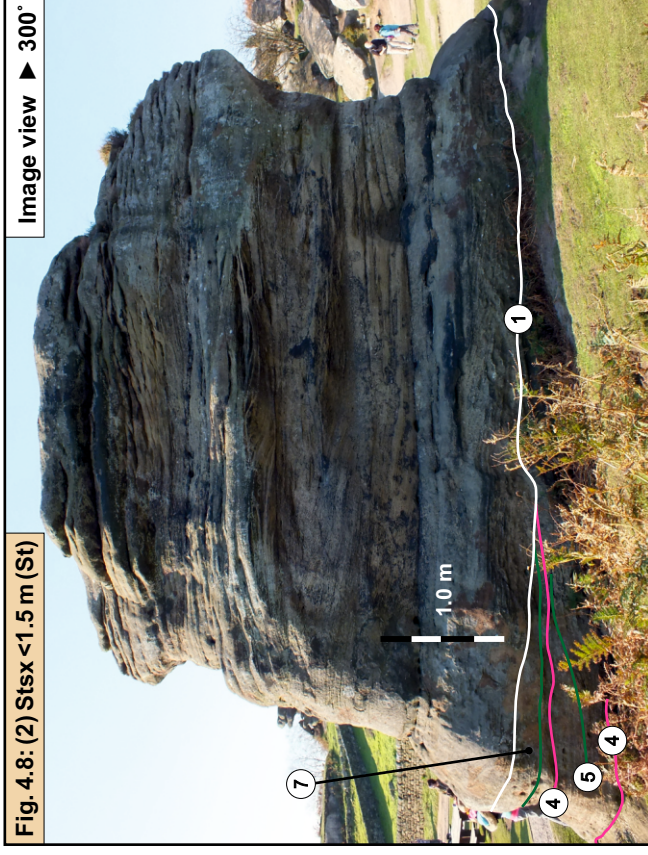
1. Poorly defined likely asymmetrical ripples
2. Straight to sinuous-crested ripples with ~0.30 m long ripple wavelengths
3. Ripples form components of an ~0.10 m thick ripple coset consisting of 0.01 - 0.02 m thick ripple sets
4. Ripple trend between 144°-324° and 154°-334° - normal to ripple crestline
5. Ripple crestline trending ~054°-234°
6. Grain card indicating scale of foreground

Interpretation

Facies Srsx 0.005-0.05 m likely represent current/flow generated small-scale ripple cross-stratification consistent with either upper channel fill or bar top deposition relating to shallow channel flow and low-flow stage conditions. The medium to coarse grain texture would have supported ripple formation with a likely ripple index of between 15-30. General facies interpretation - aggradation with net downstream-accretion of small-scale current ripple cross-bedding; 0.005-0.05 m crest height; fine to coarse grained sandstone.

Location: Eavestone Lake - SE 22842 67968





Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse-grained to very granular sandstone; 2-5% pebbles
Sorting & Texture	Low-high sphericity; sub-angular; moderate sorting
Set Thickness	0.20 - 0.25 m
Facies Association	Migrating dunes
Architectural Elements	Downstream-accretion macroform

Interpretation

Facies Stsx <1.5 m likely represent small-scale trough cross-bedding components of small-scale cross-cutting bed-sets, which denote downstream-accretion of prograding sand dunes, probably over a migrating mid-channel bar (macroform). General facies interpretation - aggradation with net downstream-accretion of small-scale trough cross-bedding <1.5 m trough width; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. Erosive contact with overlying set
2. Planar cross-bedding truncates lower trough cross-bedding indicating erosive contact
3. Trough foresets truncated by the overlying bed - first-order set boundary
4. Coset/Coset boundary defined by third-order erosional bounding surface
5. Set boundary - first-order bounding surface
6. Varying trough morphology (e.g. profile) suggests that the depositional environment was relatively dynamic with fluctuating turbulence
7. Reference point of expanded view for facies Stsx <1.5m

Location: Brimham Rocks - SE 20670 65020

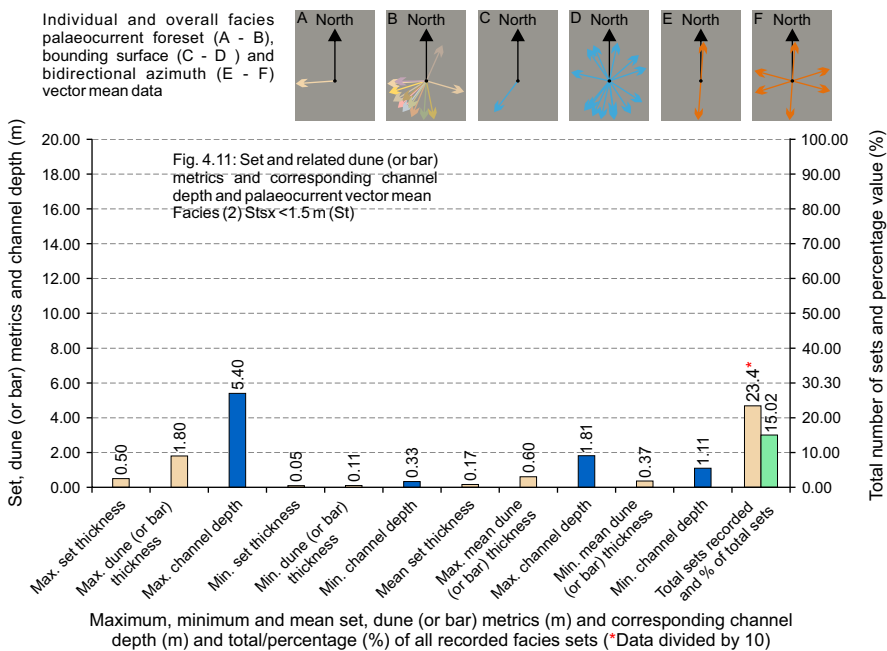
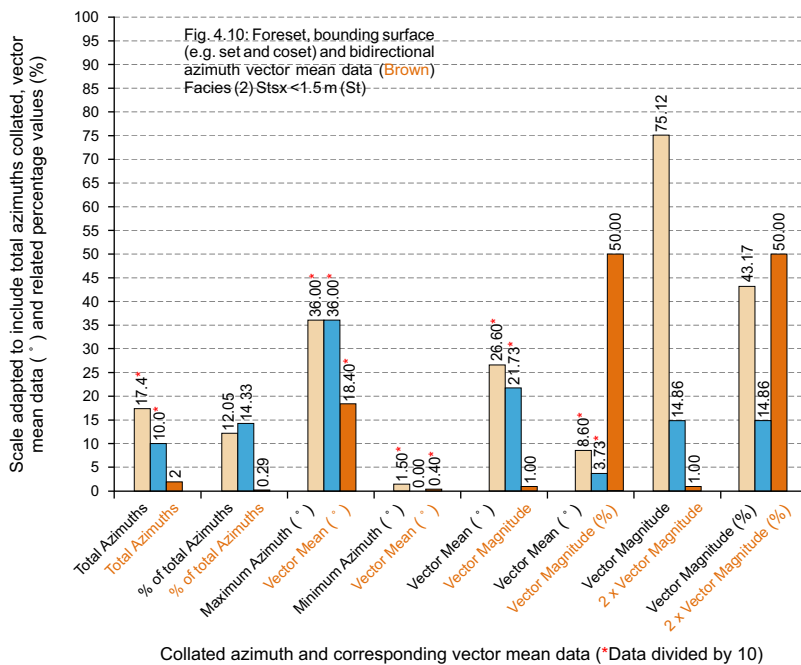
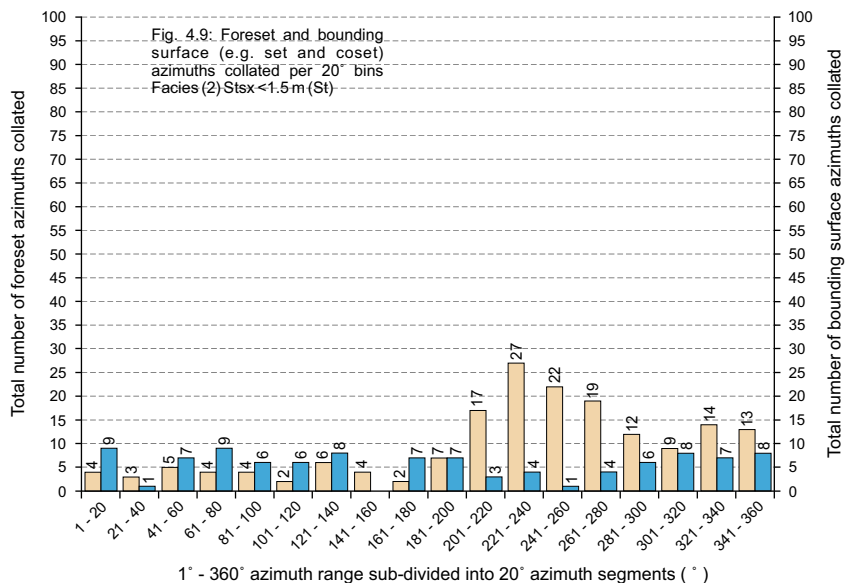
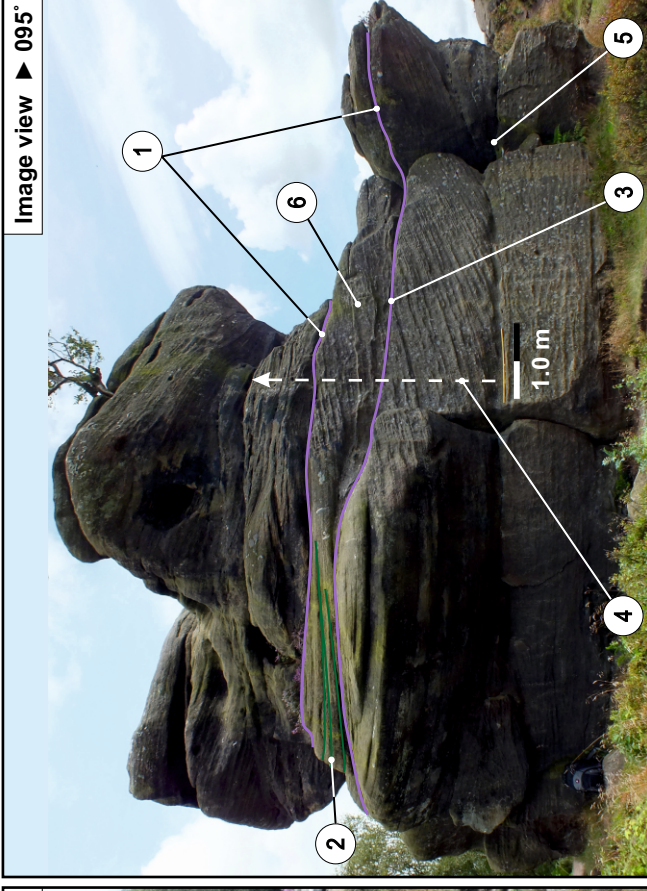
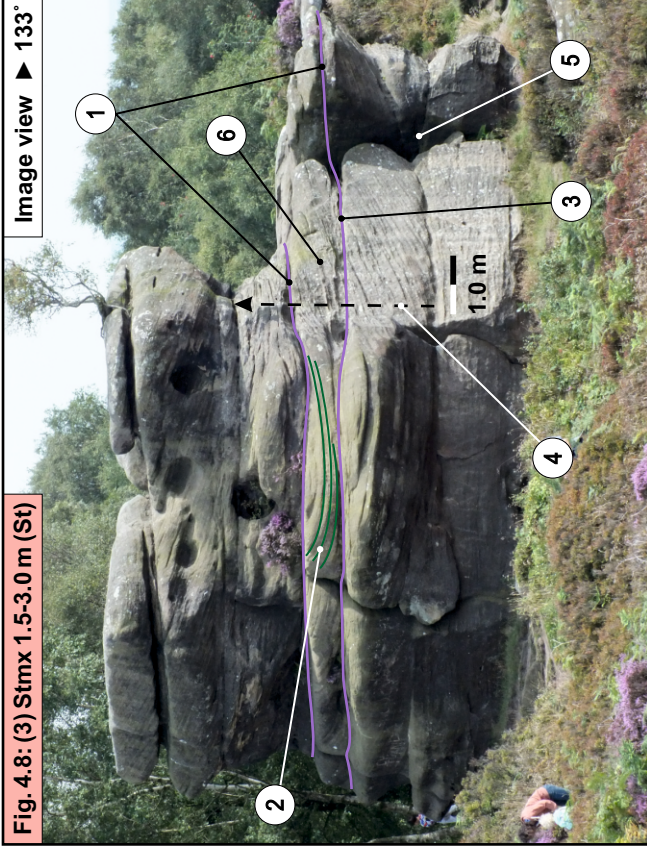


Fig. 4.8: (3) Stmx 1.5-3.0 m (St)



Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse to very coarse-grained sandstone; ~2% pebbles
Sorting & Texture	High sphericity; sub-rounded/rounded; moderate/well sorted
Set Thickness	~0.10 m
Facies Association	Migrating dunes
Architectural Elements	Downstream-accretion (Sandy bedform)

Interpretation

Facies Stmx 1.5-3.0 m likely represent a component of downstream migration and channel fill sequence relating to the thalweg region of a relatively deep and wide channel, where large bedforms had the potential to develop and migrate downstream. Sediment input was likely facilitated by a flood event with sediment migration (high-flow stage) and aggradation (low-flow stage) enabling the net deposition of medium-scale 3D mesoforms during waning flow. General facies interpretation - aggradation with net downstream-accretion of medium-scale trough cross-bedding 1.5-3.0 m trough width; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. Second-order coset bounding surface highlighting extent of facies Stmx 1.5-3.0 m; medium-scale trough cross-bedding
2. Low to high-angle sub-horizontal sets forming low-amplitude cross-bedding; coarser grain component delineates set boundaries - normal grading
3. Sharp horizontal (in part) and erosive coset base
4. Large (base) to small-scale (top) trough cross-bedding suggests decreasing channel depth
5. Jointed and blocky outcrop
6. Relatively tabular coset appearance

Location: Brimham Rocks - SE 20897 64929

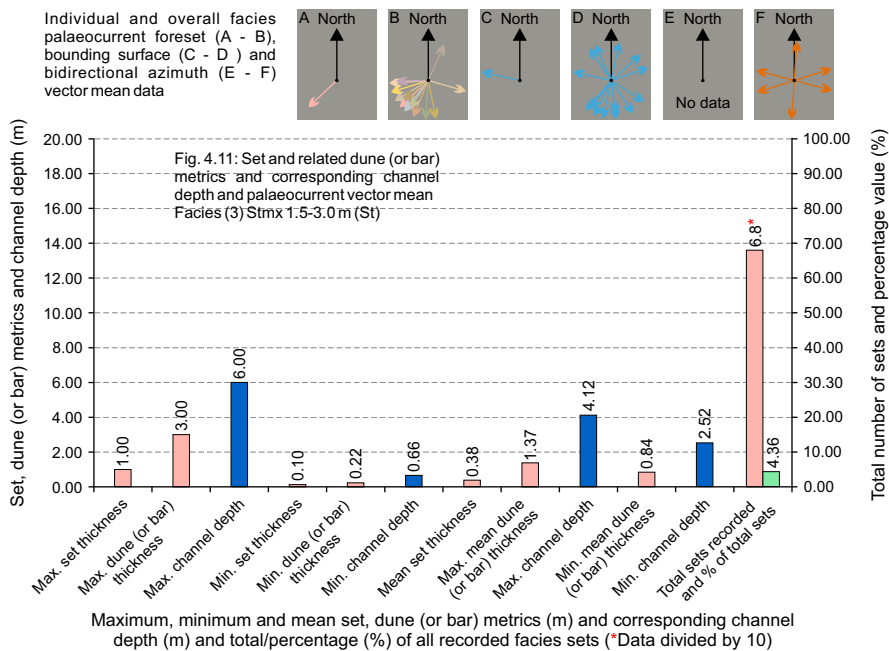
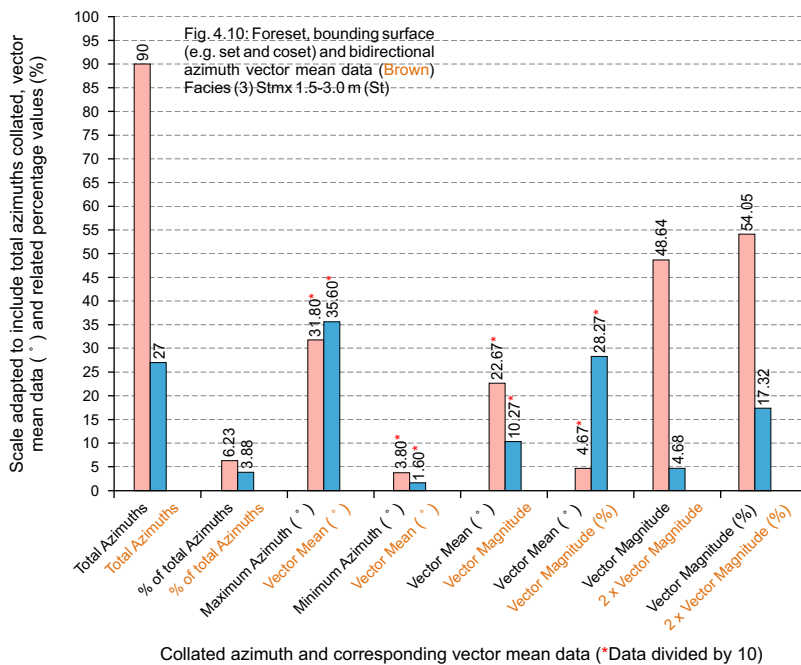
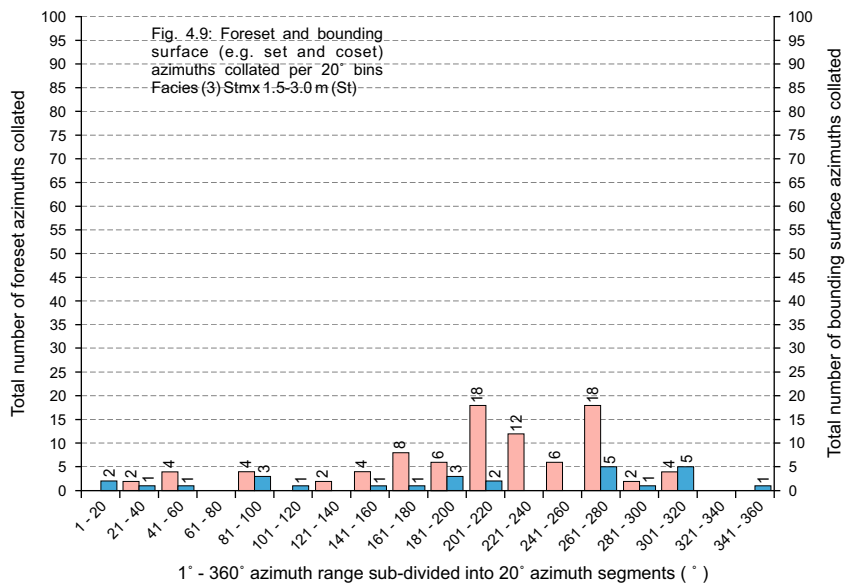
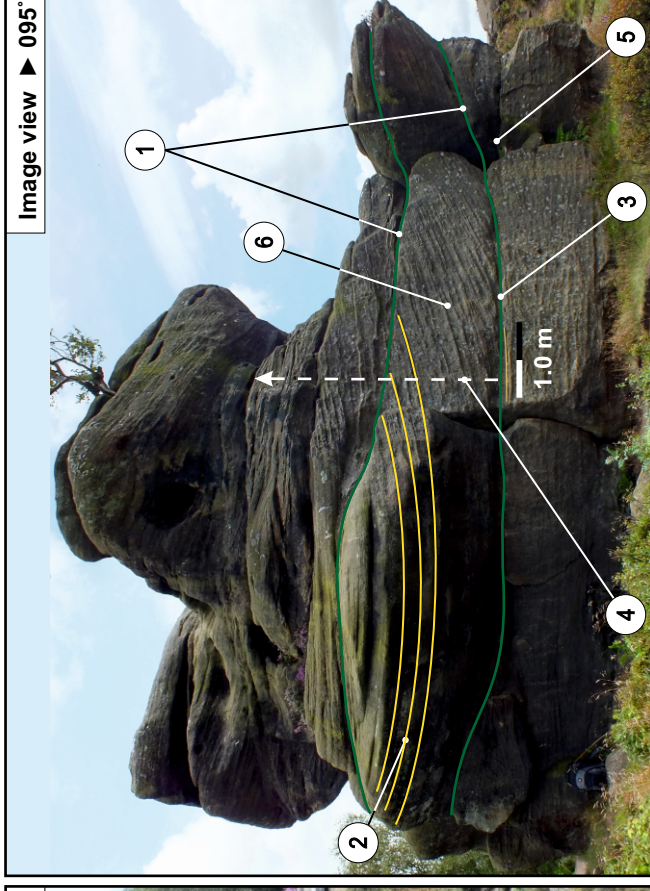
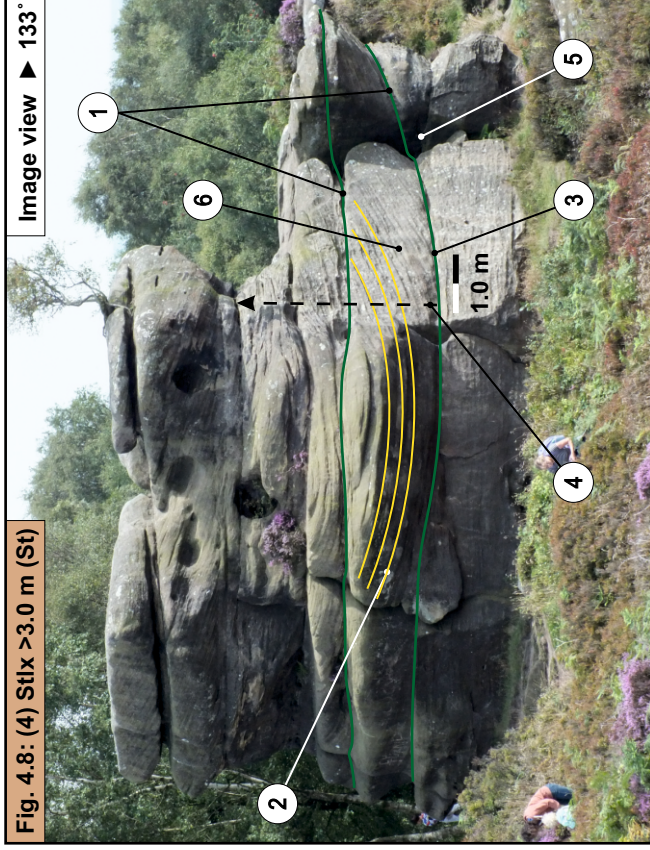


Fig. 4.8: (4) Stlx >3.0 m (St)



Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Very coarse-grained to granular sandstone; 2-5% pebbles
Sorting & Texture	High sphericity; sub-angular/rounded; poor/moderate sorting
Set Thickness	~1.35 m
Facies Association	Migrating bar
Architectural Elements	Downstream-accretion (Sandy bedform)

Interpretation

Facies Stlx >3.0 m likely represent a component of downstream migration and channel fill sequence relating to the thalweg region of a relatively deep and wide channel, where large bedforms had the potential to develop and migrate downstream. Sediment input was likely facilitated by a flood event with sediment migration (high-flow stage) and aggradation (low-flow stage) enabling the net deposition of large-scale 3D mesoforms during waning flow. General facies interpretation - aggradation with net downstream migration of large-scale trough cross-bedding (sandy bedform) >3.0 m trough width; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. First-order set bounding surface highlighting extent of facies Stlx >3.0 m; large-scale trough cross-bedding
2. Low to high-angle foresets; coarser grain component delineates set boundaries - normal grading
3. Sharp horizontal (in part) and erosive set base
4. Large (base) to small-scale (top) trough cross-bedding suggests decreasing channel depth
5. Jointed and blocky outcrop
6. Relatively tabular set appearance

Location: Brimham Rocks - SE 20897 64929

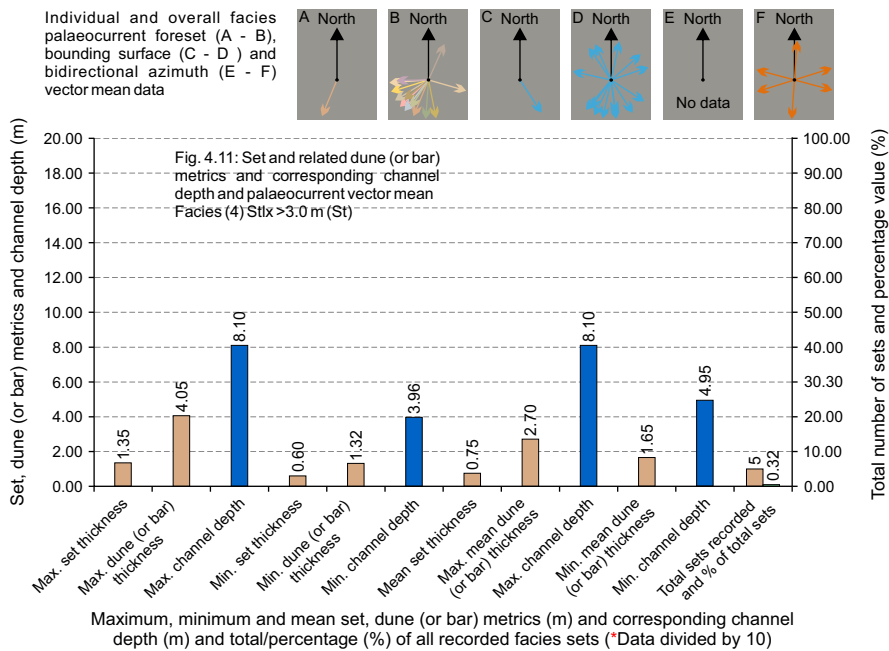
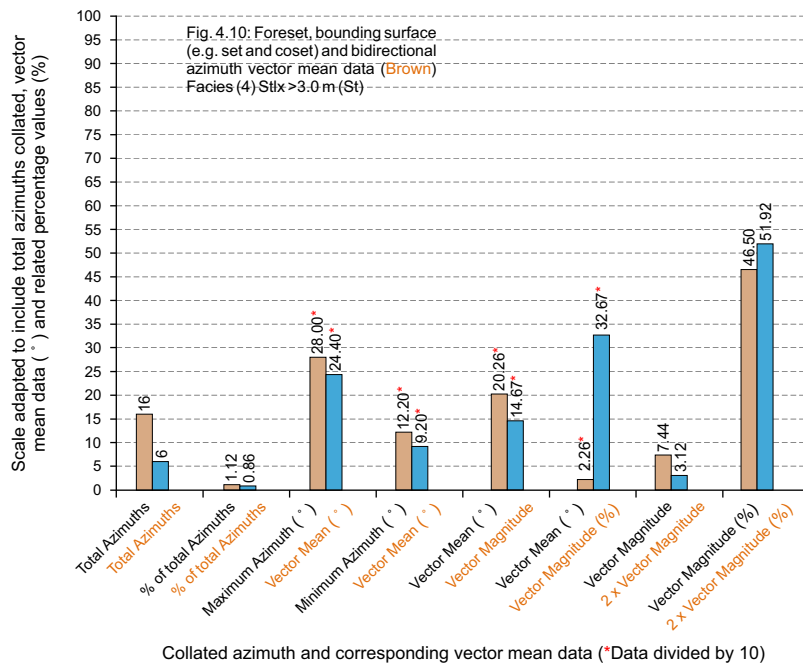
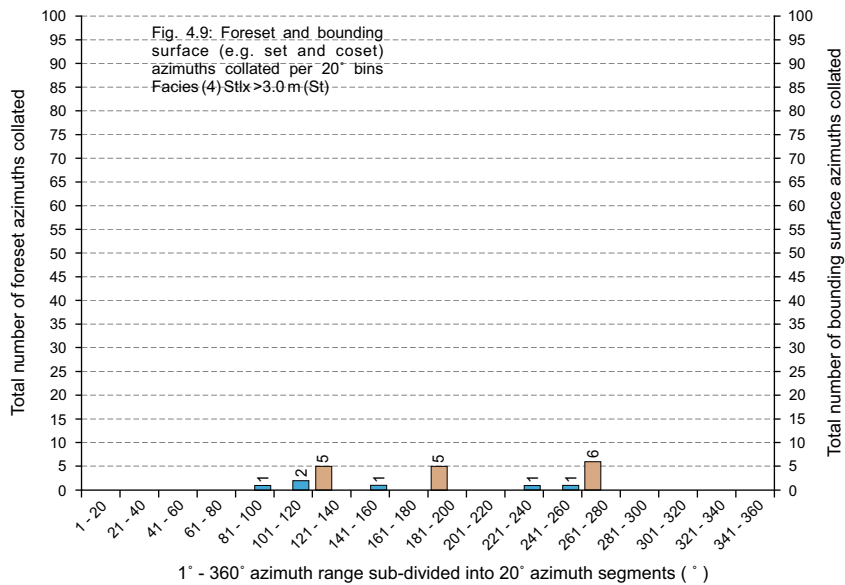
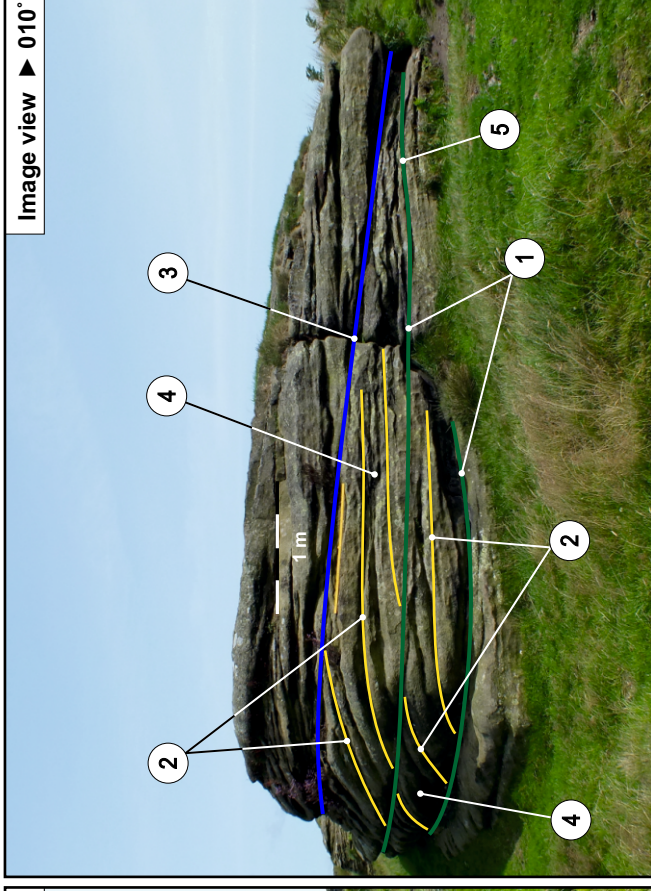
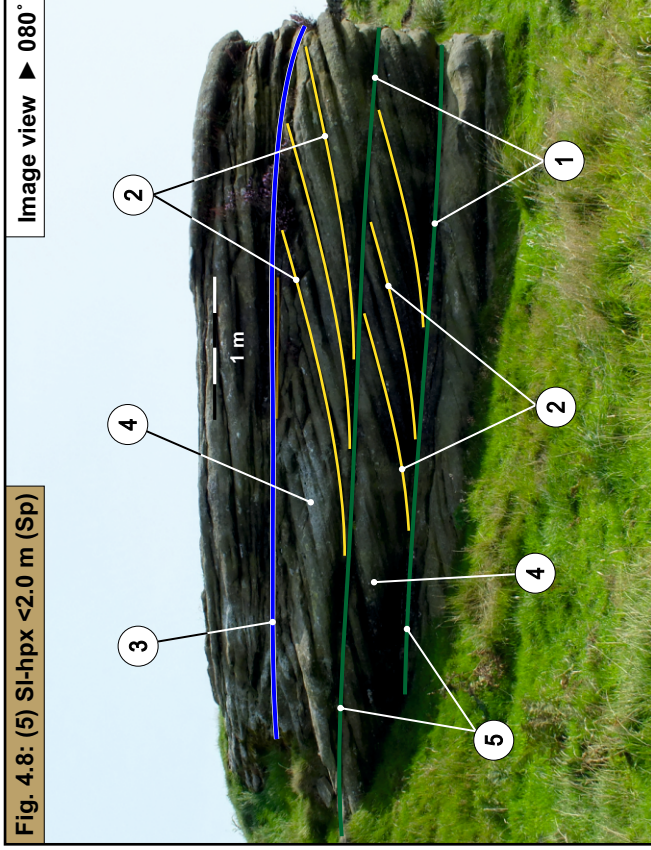


Fig. 4.8: (5) Sl-hpx <2.0 m (Sp)



Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse to very coarse-grained sandstone; ~2% pebbles
Sorting & Texture	Low-high sphericity; sub-angular/rounded; moderate sorting
Set Thickness	0.30 - 0.55m
Facies Association	Sand flat (Channel fill)
Architectural Elements	Downstream-accretion (Sandy bedform)

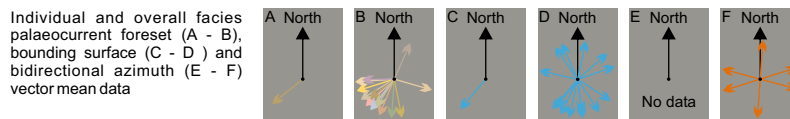
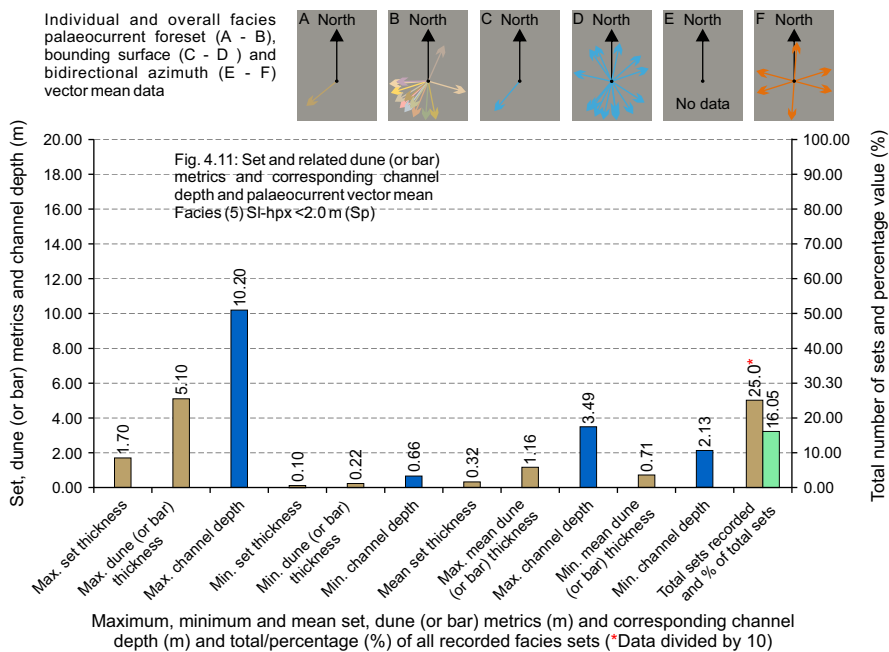
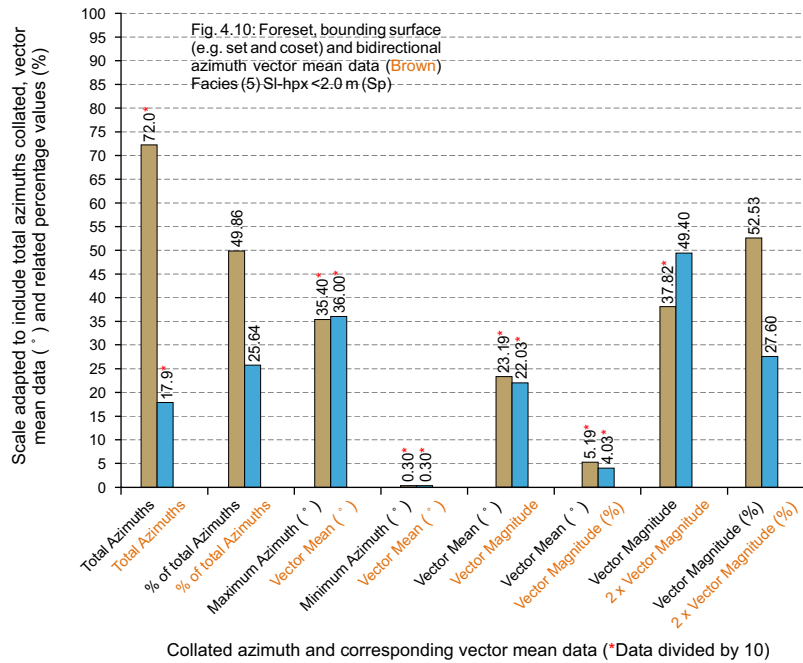
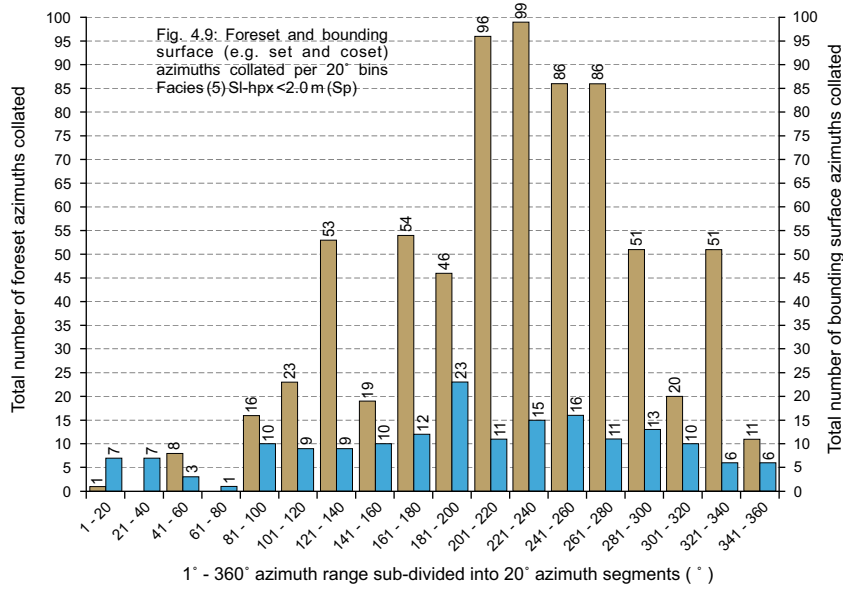
Interpretation

Facies Sl-hpx <2.0 m likely represent channel fill and sand flat deposits, rather than migratory mid-channel bars; in channel bedform migration and subsequent net deposition (aggradation) of 2D mesoforms was likely facilitated by flood events (high-flow stage) and waning flow (low-flow stage), respectively. Such facies probably formed towards the channel thalweg/axis where larger bedforms generally develop. General facies interpretation - aggradation with net downstream migration of <2.0 m thick small to large-scale planar cross-bedding (sandy bedform); medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. First-order set bounding surface highlighting extent of facies Stlx >3.0 m; medium-scale planar cross-bedding
2. 0.05 m thick low to high-angle-inclined tangential foresets
3. Fifth-order bounding surface - erosional sub-horizontal channel base
4. Relatively tabular set appearance
5. Sharp horizontal and erosive set base

Location: High Wild Carr Farm - SE 17053 66178



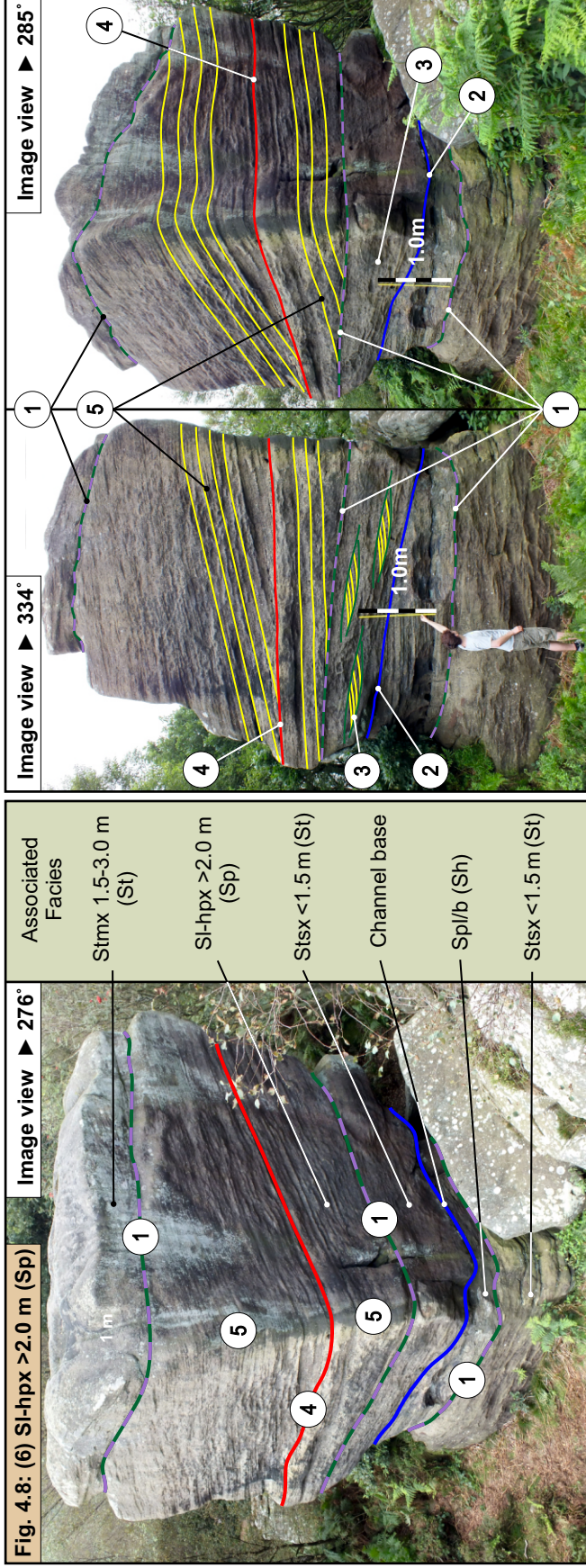


Fig. 4.8: (6) Sl-hpx > 2.0 m (Sp)

Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Coarse-grained to granular sandstone
Sorting & Texture	High sphericity; sub-rounded; moderately sorted
Set Thickness	~3.0 m
Facies Association	Migrating bar
Architectural Elements	Oblique downstream-accretion macroform

Interpretation

Facies Sl-hpx > 2.0 m likely represent an alternate bar (2D macroform); McCabe (1977) interpretation such bars as forming within 1.0 - 2.0 km wide and 30.0 - 40.0 m deep distributary channels. The ~3.0 m thick set implies the alternate bar likely formed within a deep channel and the shallow inclined (12°) first-order bounding surface dip corresponds with McCabe's (1977) observation that distributary channel dips were in the region of ≤10° and Bristow (1993a) arguing that very low angle bounding surfaces correspond to channels possessing high width to depth ratios. General facies interpretation - aggradation with net downstream migration of >2.0 m thick very-large-scale planar cross-bedding; coarse-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. First-order set (green) and second-order coset (plum) bounding surfaces highlighting extent of facies boundaries; facies, as per side panel
2. Fifth-order bounding surface - erosional sub-horizontal channel base dipping in an easterly direction
3. Small-scale sub-horizontal cross-cutting trough cross-bedding forming <0.20 m thick sets. Set migration towards the west, from right to left of image
4. First-order reactivation surface
5. Low to medium-angle-inclined very-large-scale planar cross-bedding with foresets forming repeated grain flow avalanche deposits; migration towards the west, from right to left of image. The very large-scale planar cross-bedding likely form components of a migrating "alternate bar" (2D macroform); first-order reactivation surface indicates fluctuating palaeocurrent

Location: Brimham Rocks - SE 20580 65060

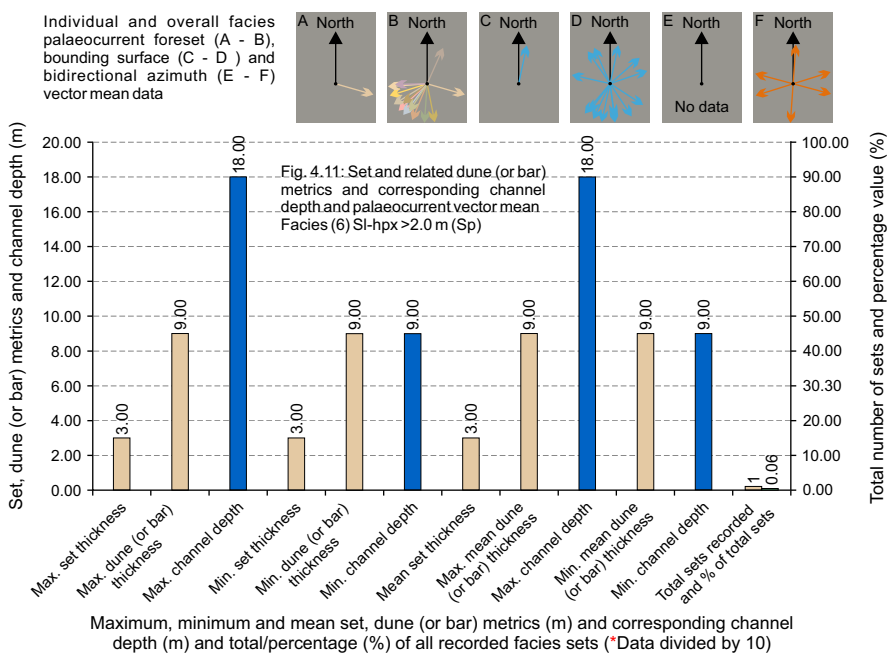
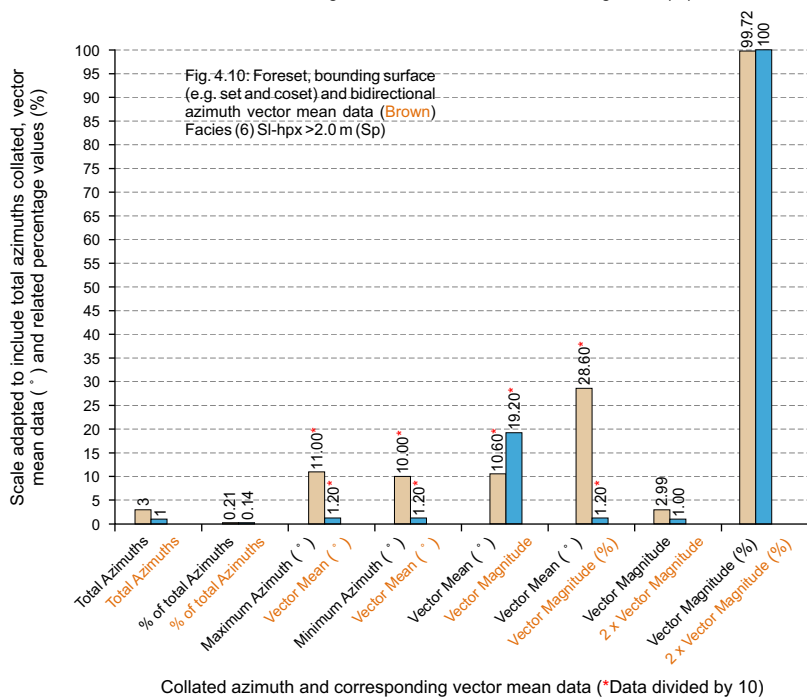
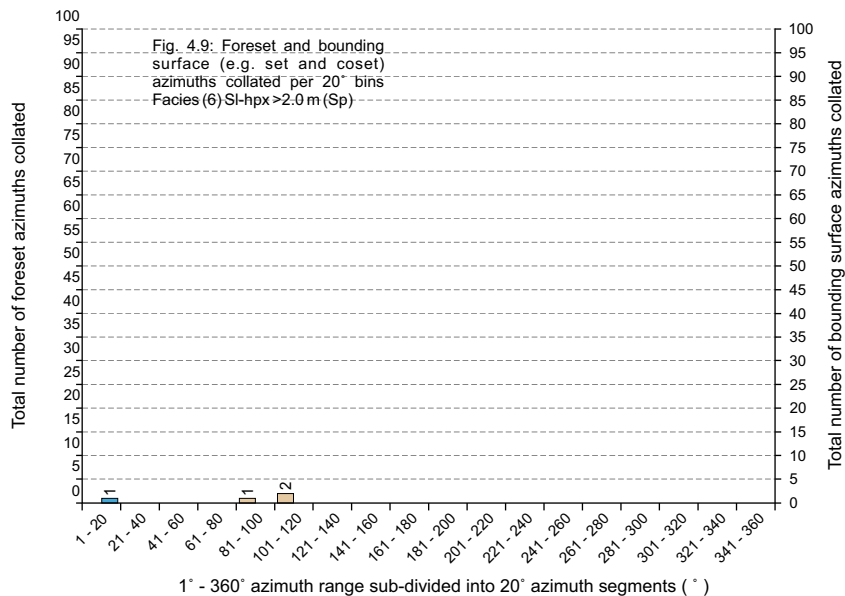
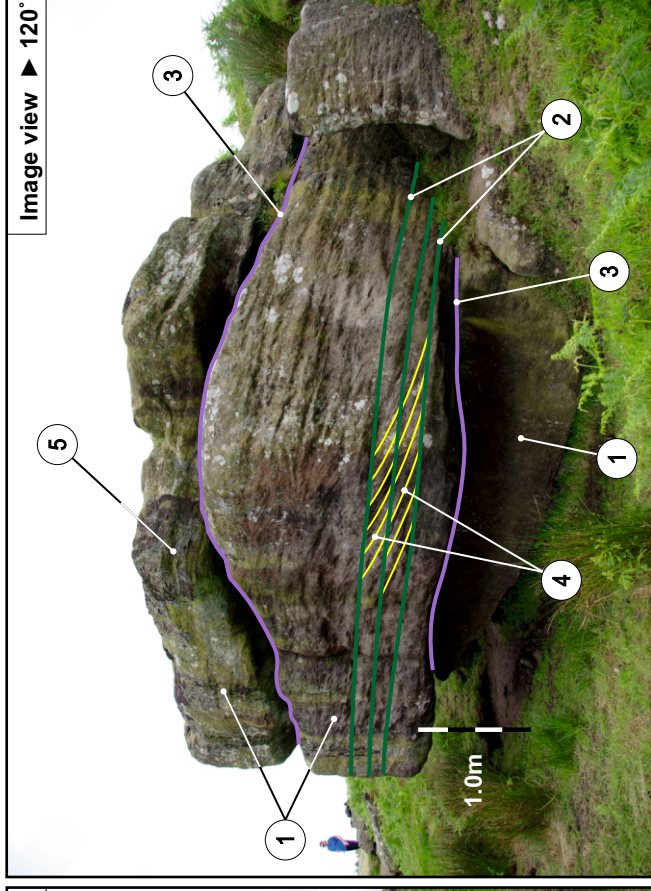
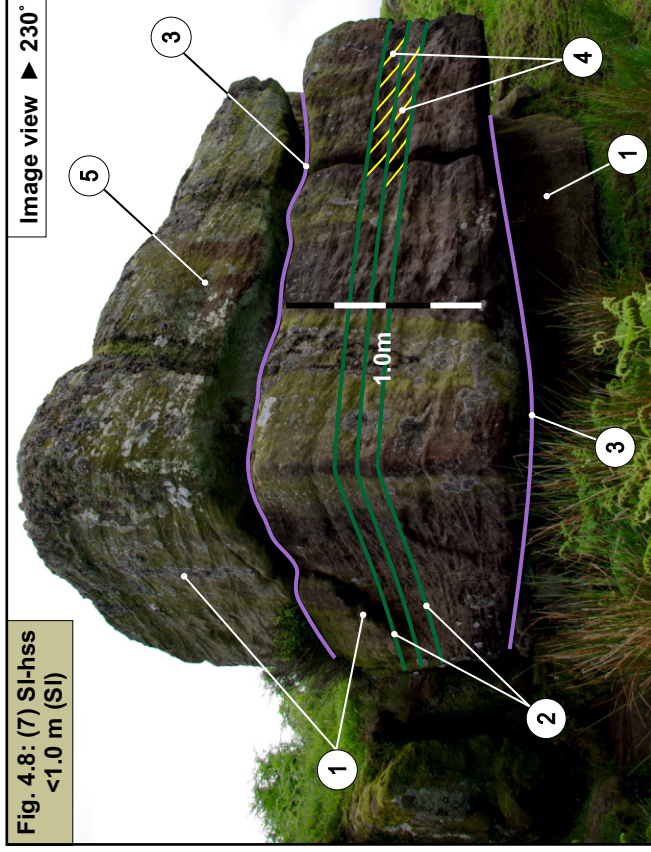


Fig. 4.8: (7) SI-hss <1.0 m (SI)



Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse-grained to granular sandstone; ~2% pebbles
Sorting & Texture	High sphericity; sub-rounded; moderately/well sorted
Set Thickness	0.10 - 0.15 m
Facies Association	Dune aggradation
Architectural Elements	Downstream-accretion (Sandy bedform)

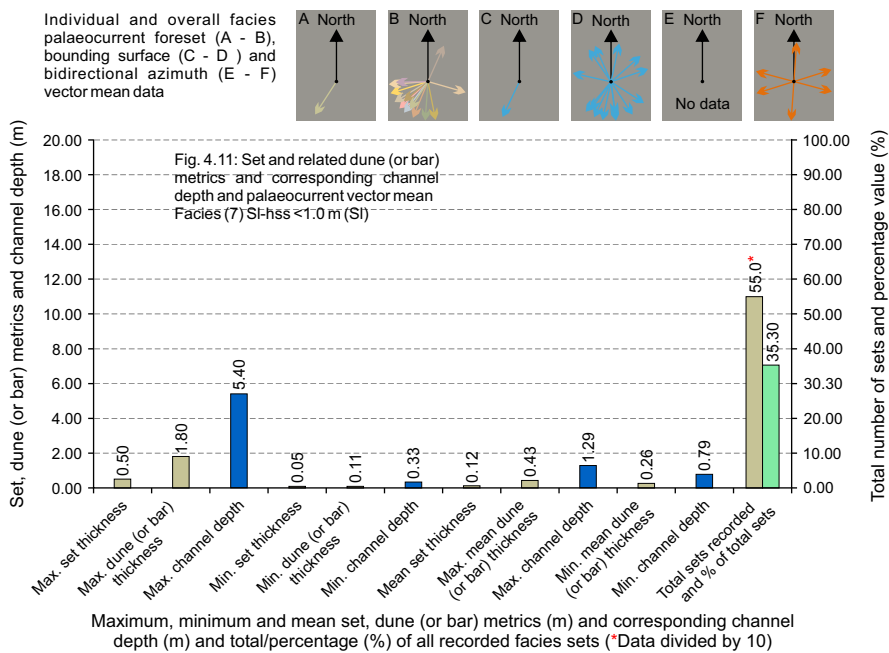
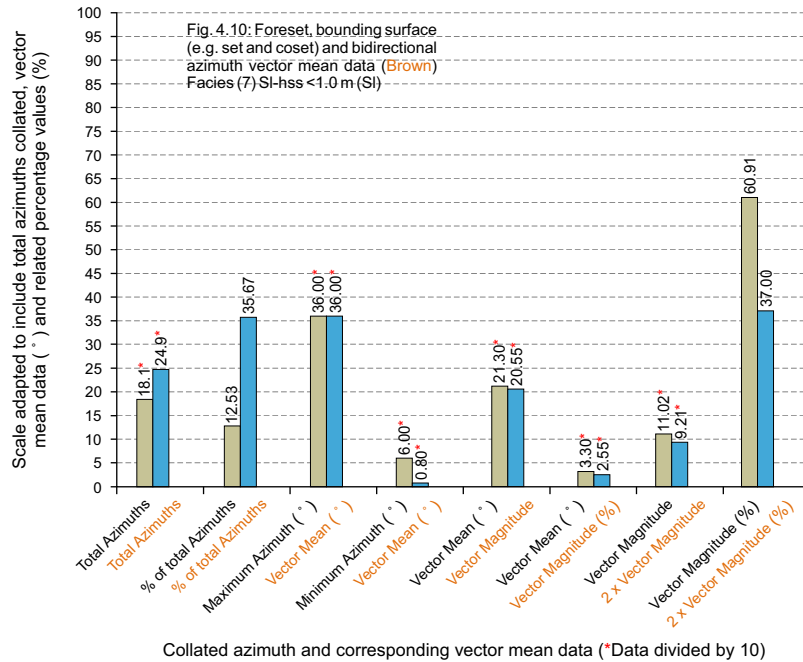
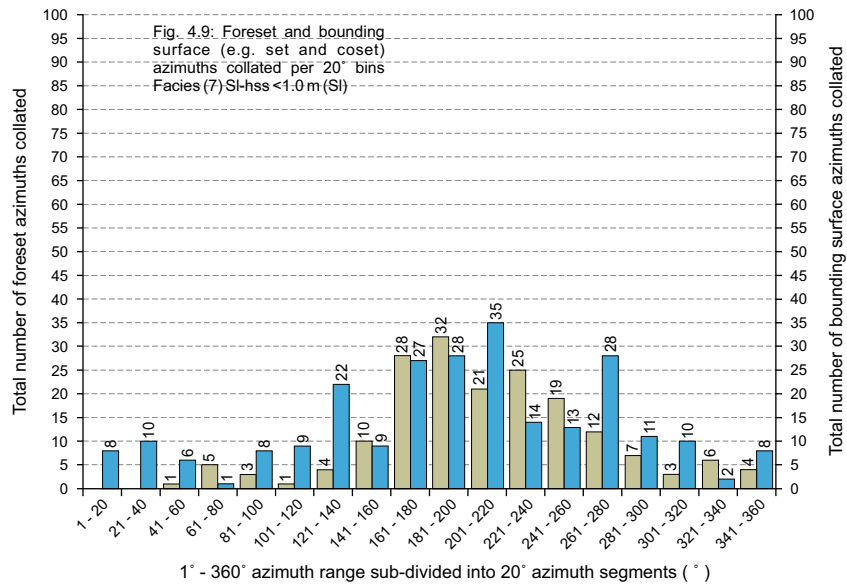
Interpretation

Facies SI-hss <1.0 m likely represent migratory bedforms that developed in a shallow channel, possibly on the surface of a larger sand flat or bar top. Cosets of SI-hss <1.0 m may represent: i. downstream migration/aggradation of small-scale unit bars/dunes; ii. latter stages of a channel fill sequence influenced by high-flow stage facilitating the formation of down-climbing dunes; or iii. sets divided by first-order bounding surfaces may denote repeated bedform migration as a train of dunes (dune stacking) and consecutive cross-laminated sets likely denote a measure of net deposition. General facies interpretation - aggradation with net downstream-accretion of <1.0 m thick sub-horizontal sets; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. Coset of facies SI-hss <1.0 m (SI) - poorly defined
2. First-order set bounding surfaces highlighting coset components consisting of 0.10-0.15 m thick sub-horizontal sets - poorly defined
3. Relatively horizontal second-order coset bounding surface - sharp contact
4. Low to high-angle-inclined foresets forming set components - poorly defined
5. Jointed and blocky outcrop

Location: Hood Crag - SE 13594 59221



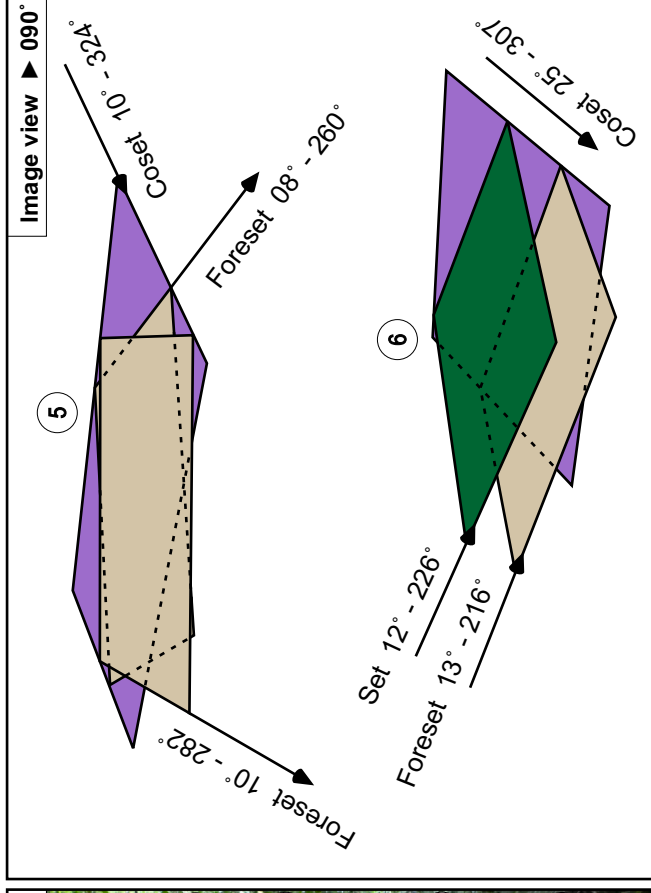
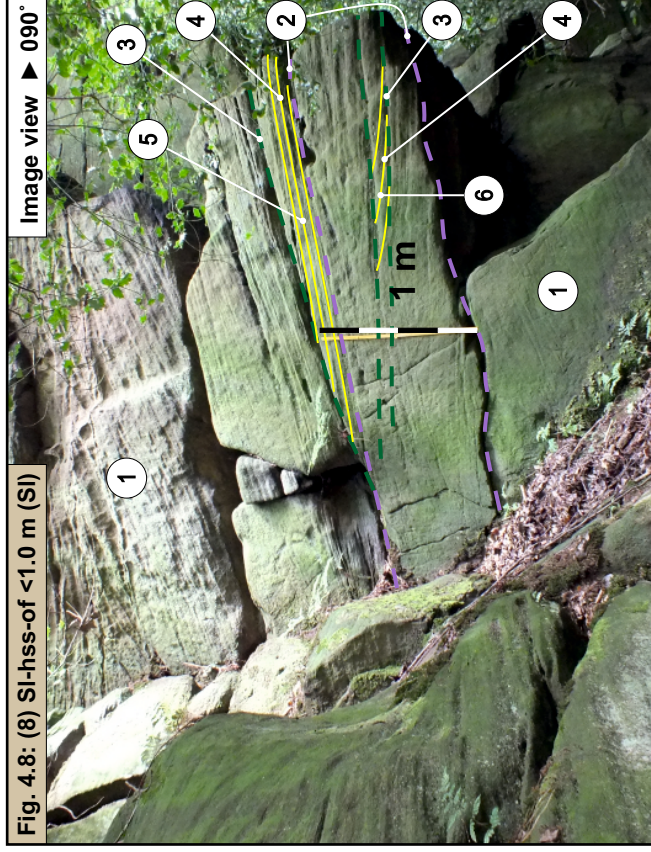


Fig. 4.8: (8) Sl-hss-of <1.0 m (Sl)

Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse-grained to granular sandstone; 2-5% pebbles
Sorting & Texture	Low-high sphericity; sub-angular/rounded; poorly/very well sorted
Set Thickness	0.10 - 0.15 m
Facies Association	Migrating dunes
Architectural Elements	Lateral-accretion (Sandy bedform)

Interpretation

Facies Sl-hss-of <1.0 m likely represent net deposition through lateral-accretion of 2D mesoforms during waning flow (low-flow stage) and may form components of a small-scale unit bar. Individual sub-horizontal sets may also form components of larger host dune cosets and variable palaeocurrents may denote dune-scale bedforms that migrated obliquely over, around and down a curved bar front/tail, influenced by high-flow stage which facilitated the formation of down-climbing dunes. Further, topographic lows adjacent to bar margins may promote lateral-accretion. General facies interpretation - aggradation with net lateral-accretion of sub-horizontal sets with oblique foresets <1.0 m thick; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics

1. Blocky and jointed outcrop probably influenced by minor cambering towards the north
2. Second-order cosets of facies Sl-hss-of <1.0 m (Sl)-poorly defined
3. First-order set bounding surfaces highlighting coset components consisting of 0.10-0.15 m thick sub-horizontal sets - poorly defined
4. Low-angle-inclined foresets forming set components - poorly defined
5. Schematic representation depicting lateral-accretion relationship between coset and folets components identified in the main image
6. Schematic representation depicting lateral-accretion relationship between coset, set and folets components identified in the main image

Location: Knox Wood - SE 19173 63871

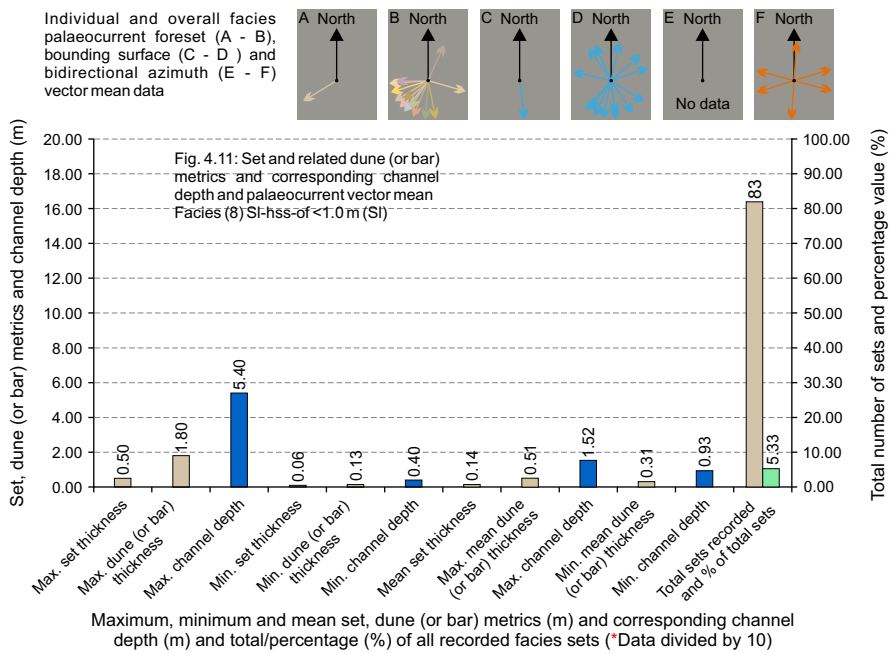
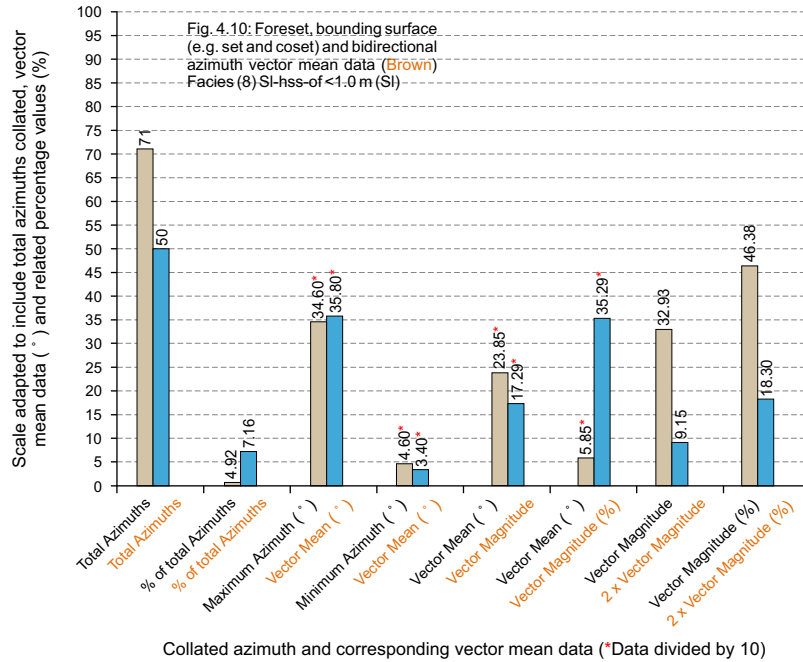
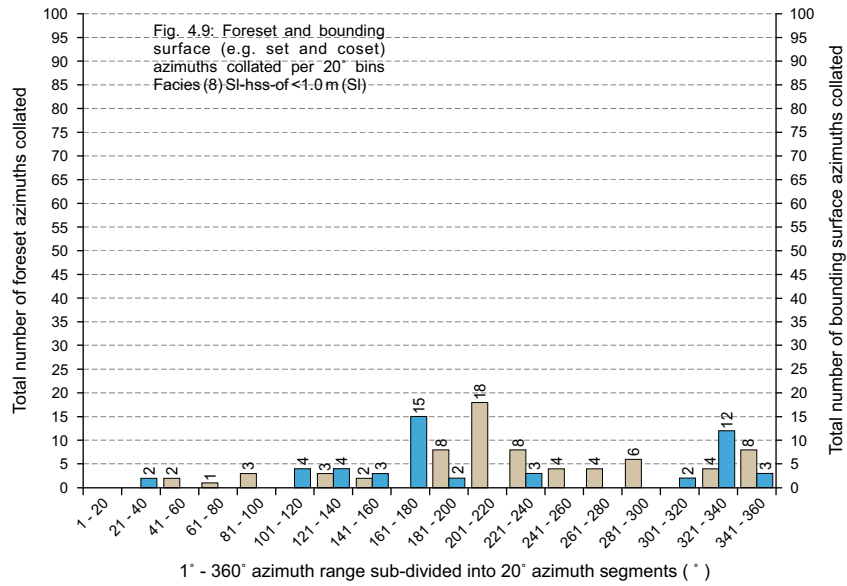
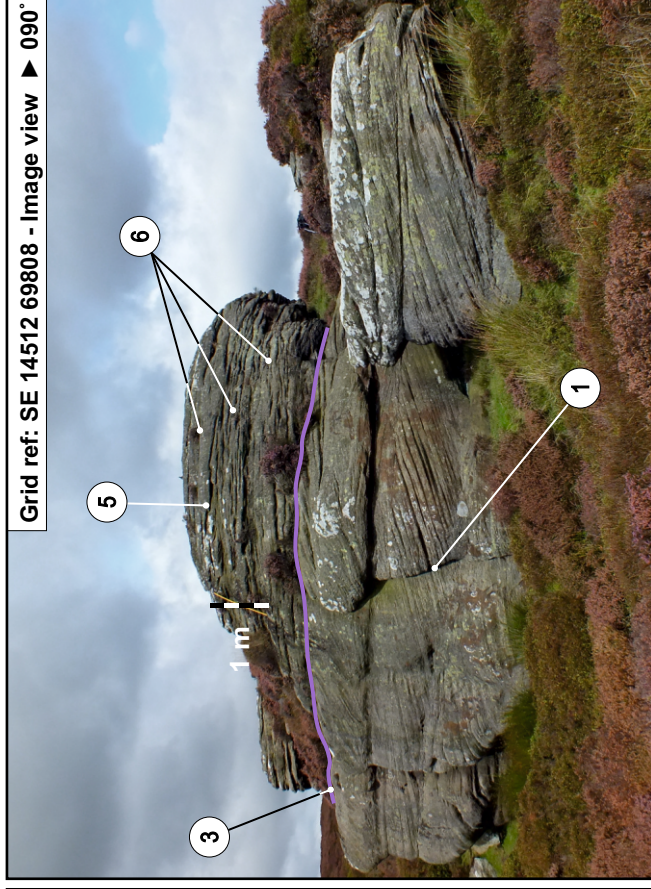
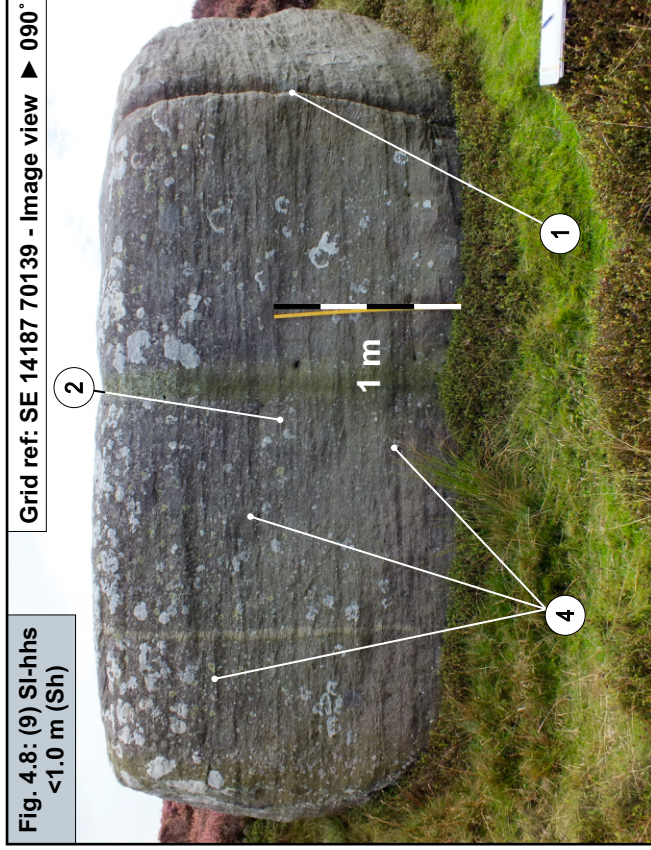


Fig. 4.8: (9) SI-hhs <1.0 m (Sh)



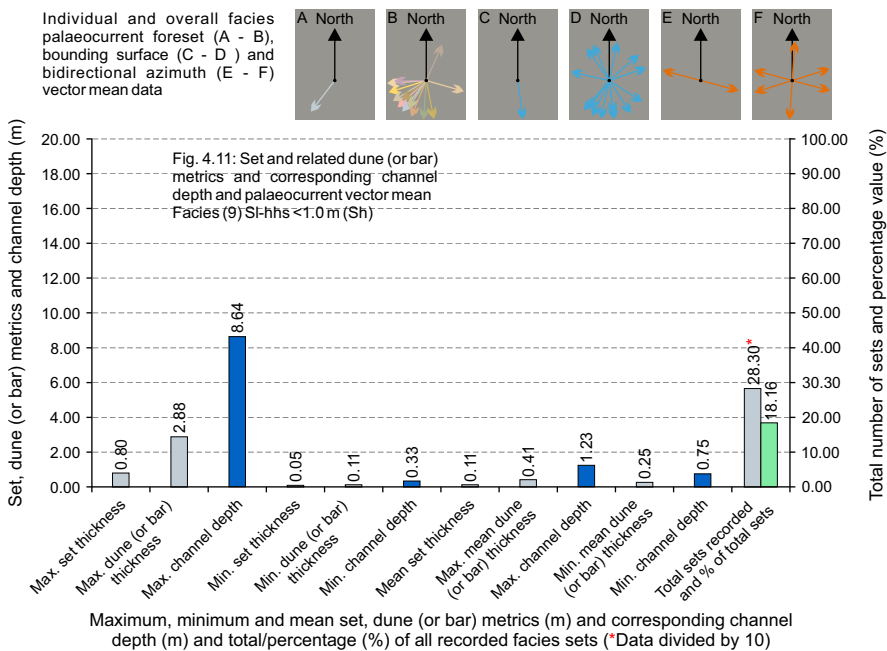
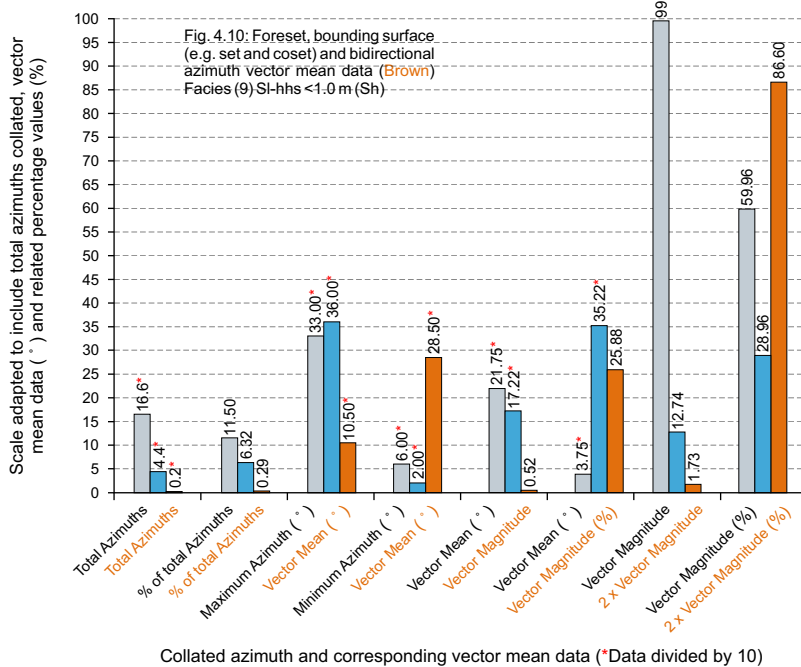
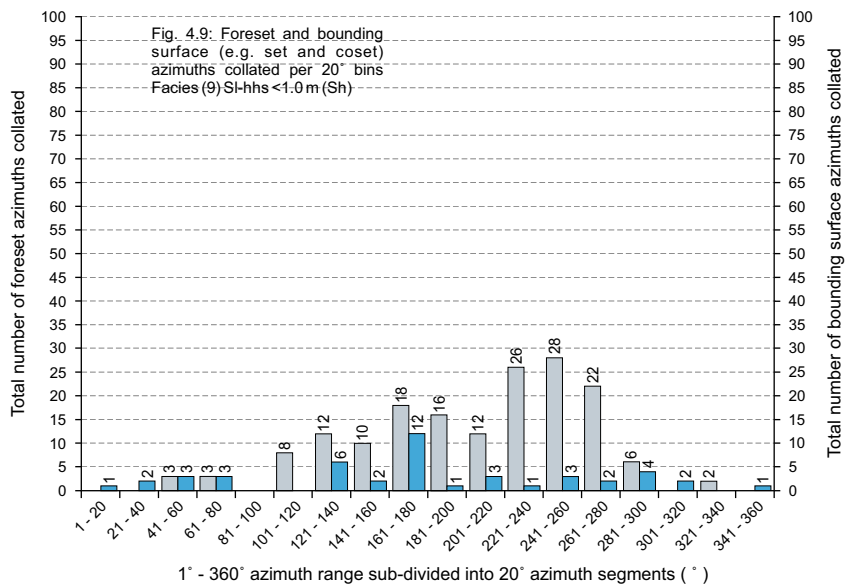
Key Facies Information	
Colour	Light grey (Weathered surface)
Grain-size	Coarse-grained to granular sandstone; 2-10% pebbles
Sorting & Texture	Low-high sphericity; sub-angular/rounded; poorly/very well sorted
Set Thickness	0.10 - 0.15 m
Facies Association	Dune aggradation
Architectural Elements	Sandy bedform

Interpretation

Facies SI-hhs <1.0 m may represent i. downstream migration and net mesoform accretion within a relatively shallow thalweg of a low sinuosity channel influenced by waning flow, net sediment aggradation and channel fill; ii. migratory bedforms that likely developed on the surface of a larger sand flat; iii. the latter stages of a channel fill sequence; or iv. distinct depositional episodes of assembled sets divided by first-order set boundaries indicating repeated bedform migration probably as a train of dunes (dune stacking) which may have formed surface components of an underlying bar. General facies interpretation - downstream migration with net aggradation of <1.0 m thick horizontal sets; medium-grained to granular sandstone; <10% pebbles.

Key Facies Characteristics	
1. Blocky and jointed outcrop	5. ~2.50 m thick coset group of facies SI-hhs <1.0 m; 0.80 - 0.90 m thick coset components
2. Minimum of 2.0 m thick coset of facies SI-hhs <1.0 m	6. First-order set bounding surfaces highlighting coset components consisting of 0.10-0.15 m thick horizontal cross-cutting sets - poorly defined
3. Second-order coset bounding surface of facies SI-hhs <1.0 m (SI) - poorly defined	
4. First-order set bounding surfaces highlighting coset components consisting of ~0.10 m thick horizontal cross-cutting sets - poorly defined	

Location: Sigsworth Crags - SE 14187 70139 - SE 14512 69808



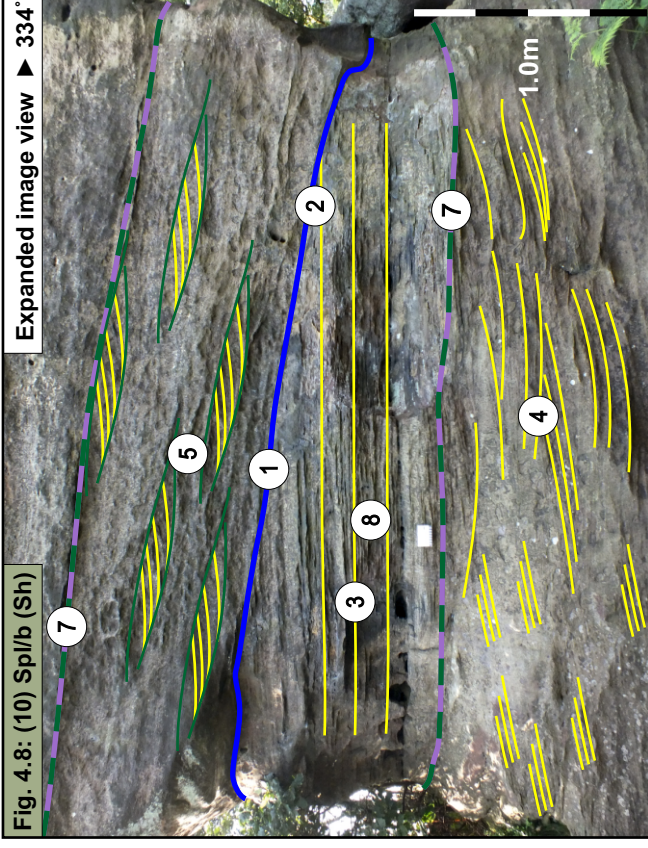


Fig. 4.8: (10) Sp/lb (Sh) Expanded image view ▶ 334°

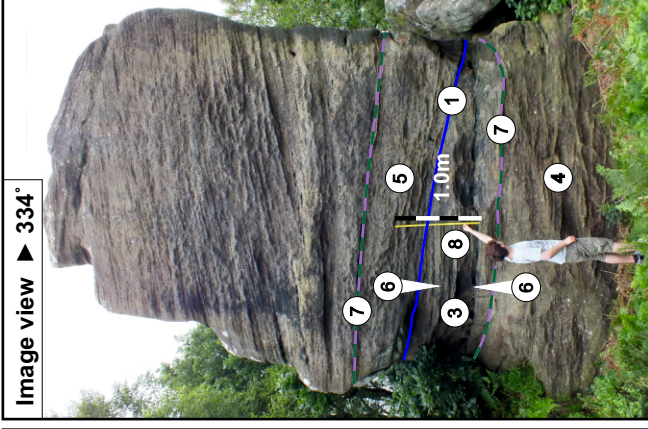


Image view ▶ 334°

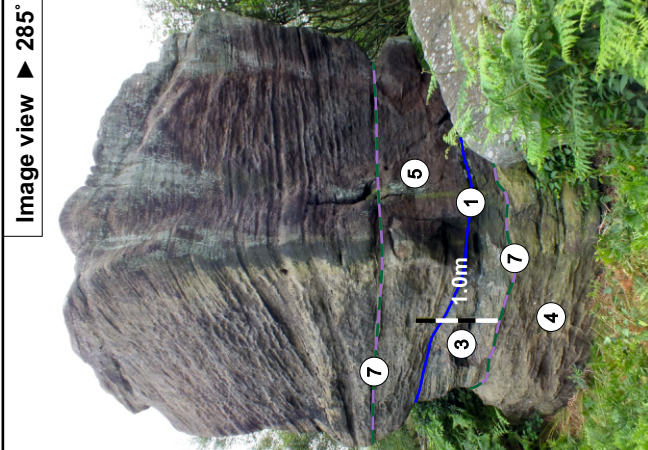


Image view ▶ 285°

Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Fine to medium-grained sandstone
Sorting & Texture	High sphericity; well rounded; very well sorted
Set Thickness	0.01 - 0.03 m (Laminations)
Facies Association	Plane bed aggradation
Architectural Elements	Sandy bedform

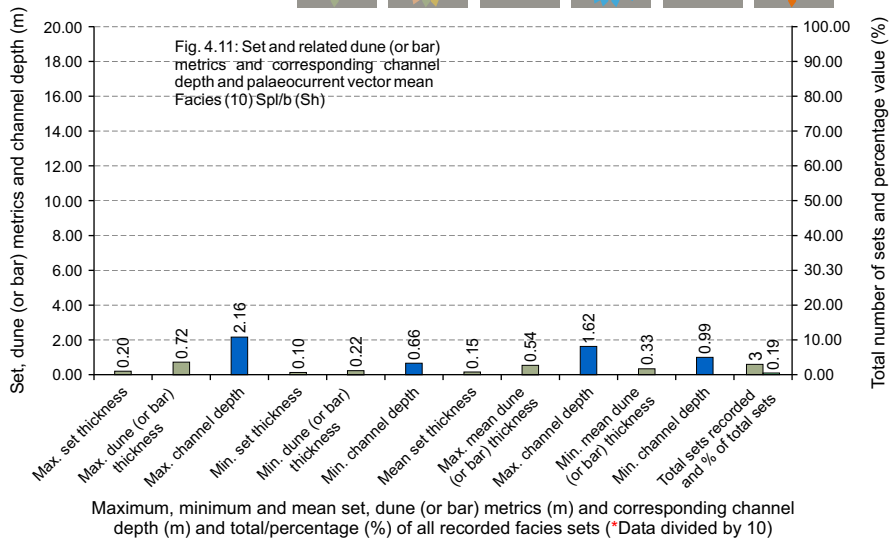
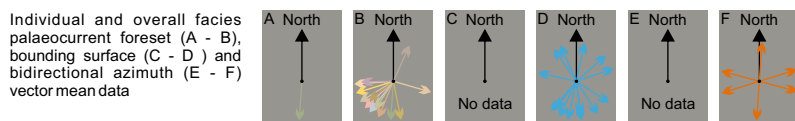
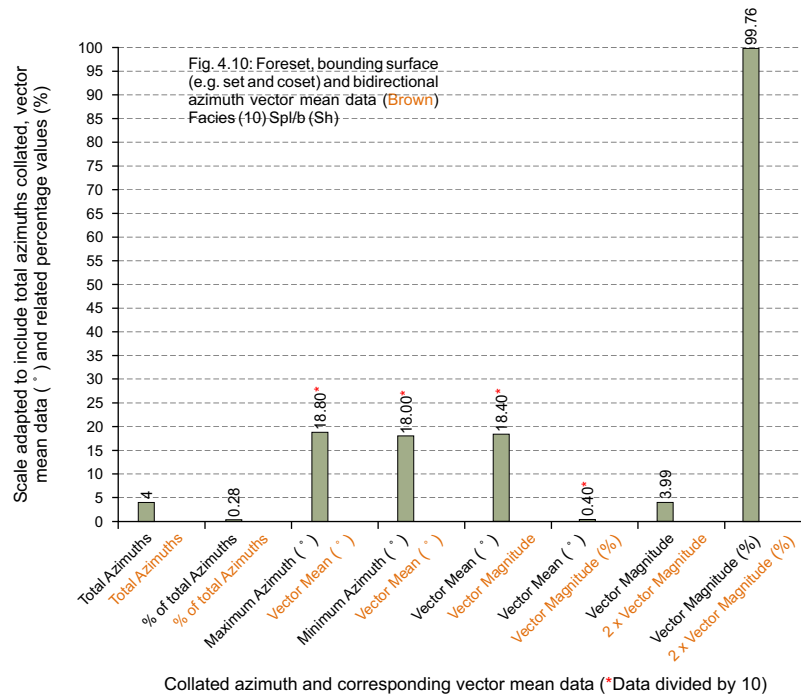
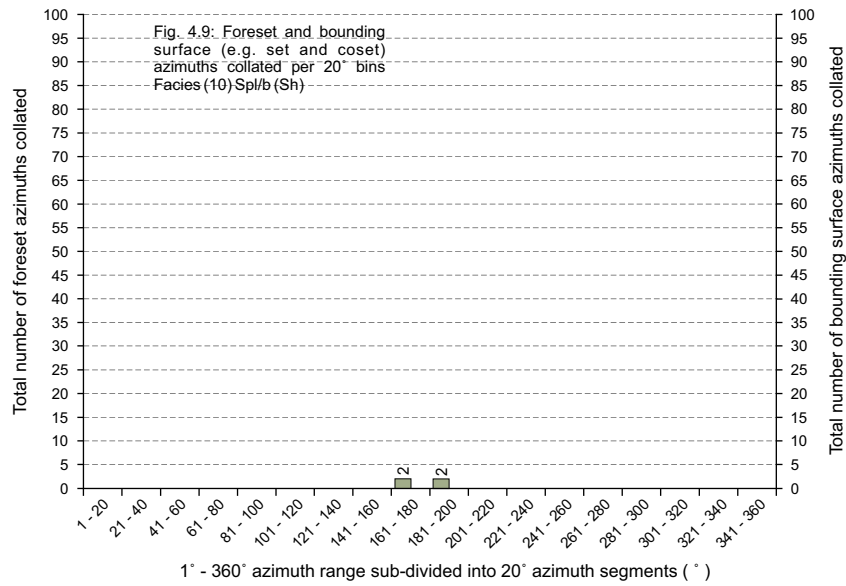
Interpretation

Facies Sp/lb; grain size/texture and apparent lack of mica imply “upper plane bed” deposition. Low-angle bedforms may be attributed to low-amplitude (near horizontal) sand waves/dunes concomitant with the transitional zone between lower and upper flow regimes and very shallow fluvial systems; generally foreset gradients decline as a flow regime intensifies, vice versa. The fifth-order bounding surface may represent: i. a hydraulic gradient during low-flow stage concentrating the flow towards the channel thalweg; or ii. bar top incision (third-order chute channel) generated due to falling-stage flow (drawdown). General facies interpretation - planar horizontal laminations and/or bedding (sandy bedform); fine to coarse-grained sandstone.

Key Facies Characteristics

1. Erosive channel base - 5th-order bounding surface dipping eastwards
2. Planar laminated bedding truncated by upper trough cross-bedding indicating an erosive contact
3. Finely laminated horizontal planar bedding
4. Trough cross-bedding migrating westwards (right to left hand side of outcrop)
5. Sub-horizontal trough cross-bedding migrating westwards eroding and climbing over underlying planar bedding
6. Fining-up and coarsening-up sequences across boundary contacts, indicating variable palaeocurrent flow
7. First-order set (green) and second-order coset (plum) bounding surfaces highlighting extent of facies boundaries
8. Reference point of expanded view for facies Sp/lb

Location: Brimham Rocks - SE 20580 65060



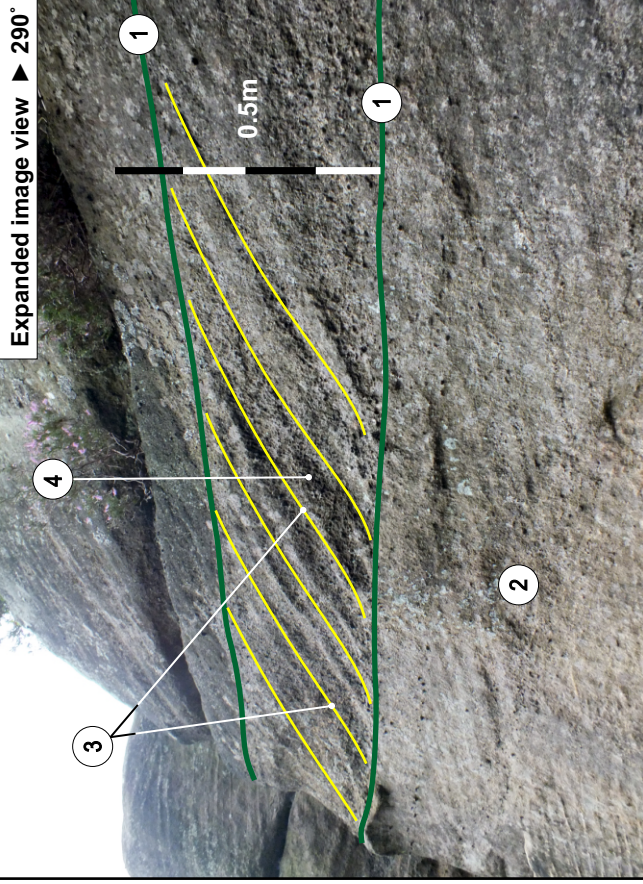
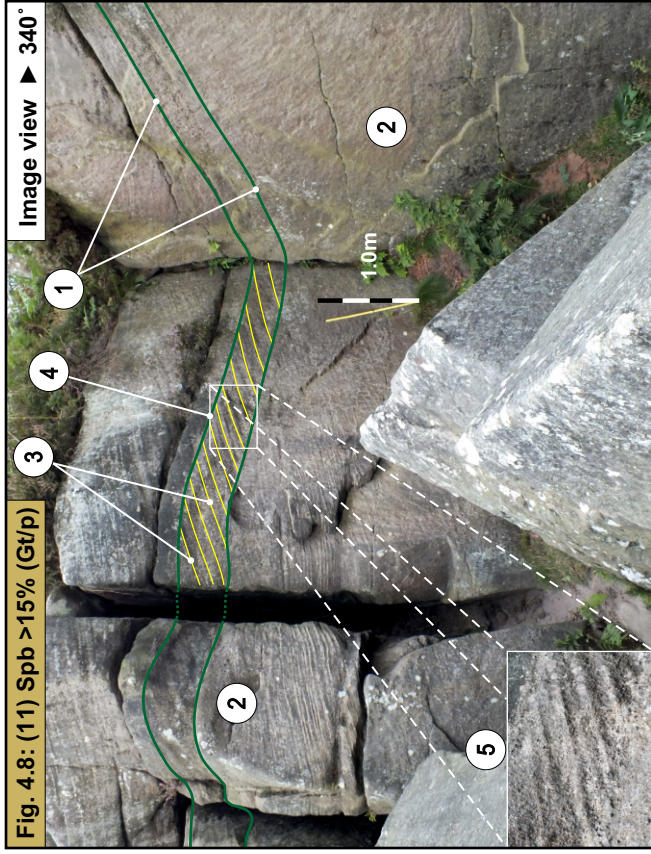


Fig. 4.8: (1) Spb >15% (Gt/p)

Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Coarse-grained to granular sandstone; 15-25% pebbles
Sorting & Texture	Low-high sphericity; sub-rounded; poorly sorted
Set Thickness	~0.40 m
Facies Association	Dune migration
Architectural Elements	Downstream-accretion (Sandy bedform)

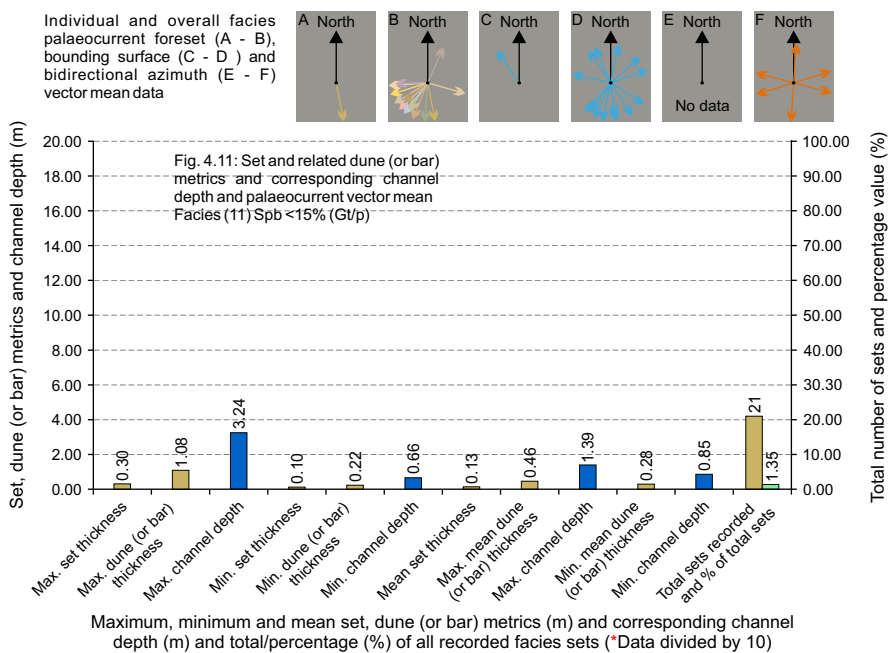
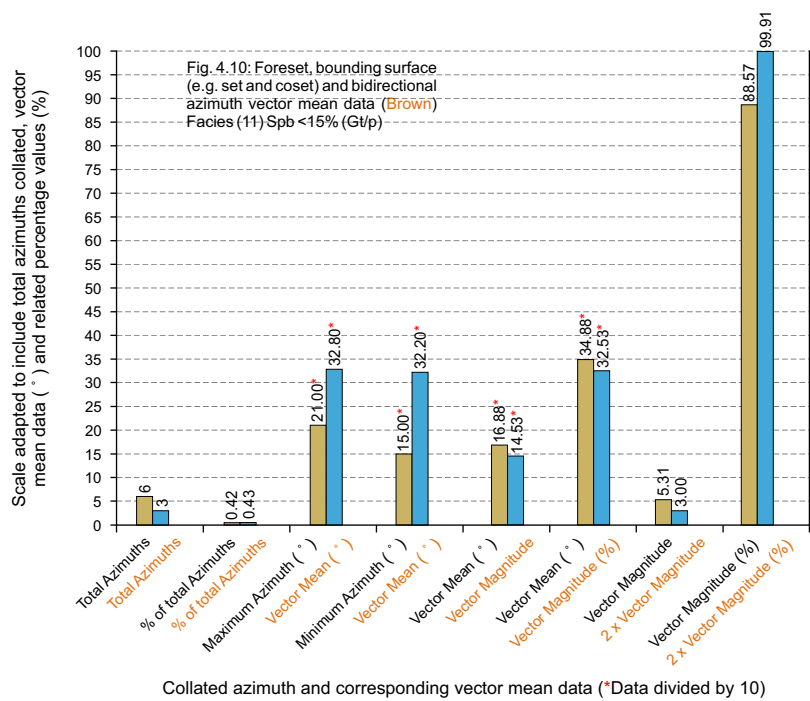
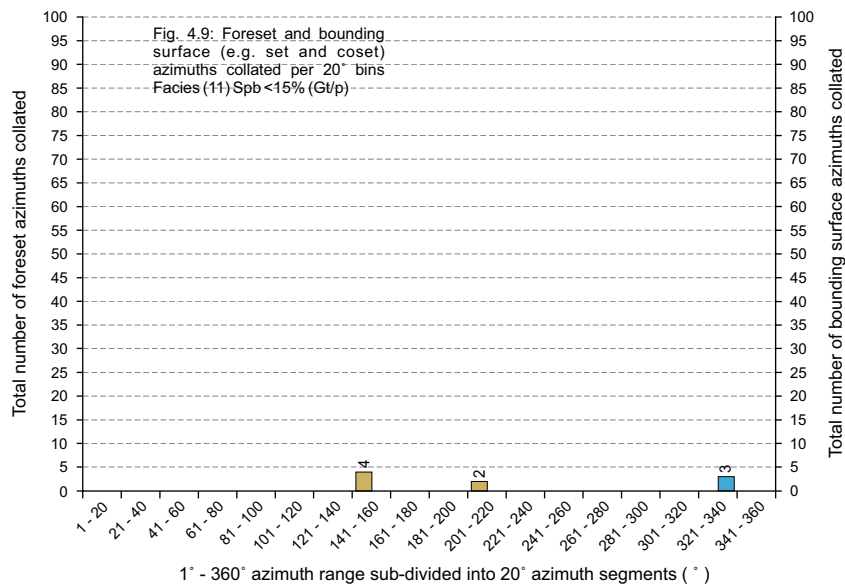
Interpretation

Facies Spb >15%; the pebble-rich bed and poorly defined foresets imply rapid deposition, probably within a relatively deep fluvial channel and facilitated by a flood event. Pebble rich deposits may also represent: i. the location of a channels thalweg/axial region, where large bedforms tend to develop; ii. bedload transport of sediment which may form mid-channel bars that subsequently act as a core/nucleus for further sediment deposition; or iii. basal flood/scour deposits and high-flow stage. General facies interpretation - Pebble rich trough or planar cross-bedding; coarse-grained to granular sandstone (pebbly bedform) with > 15% pebble content.

Key Facies Characteristics

1. First-order set bounding surfaces highlighting extent of ~0.40 m thick horizontal dune set
2. Relative thick blocky and jointed sandstone deposit; predominantly planar cross-bedding (2-D mesoform) suggests deposition within a comparatively deep and unrestricted fluvial channel. Such repeated cross-bedding may represent individual sand flat components
3. Poorly defined foreset deposits imply relatively rapid deposition facilitated by a comparatively high palaeoflow. Foresets dipping 230° southwest which suggests a southerly palaeoflow and northern sediment provenance
4. Reference point of expanded view for facies Spb >15%
5. Expanded view of poorly defined planar cross-bedding foresets, likely due to grain size, texture and rapid deposition

Location: Brimham Rocks - SE 20705 64705



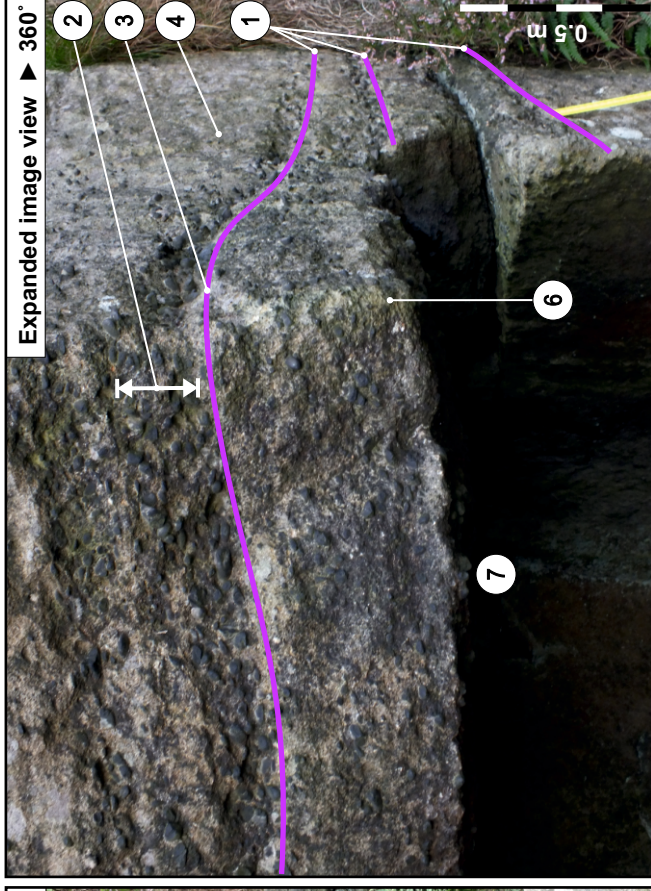
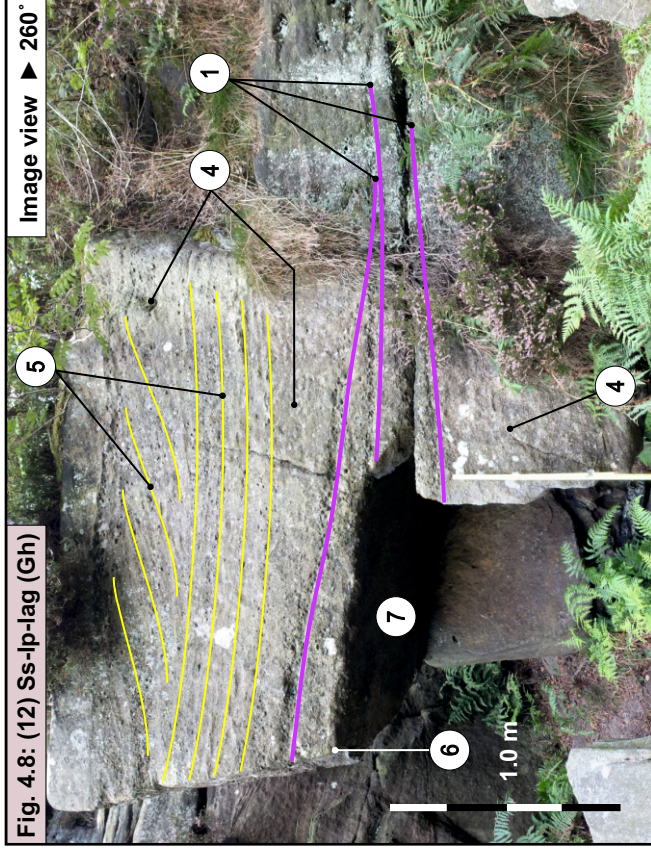


Fig. 4.8: (12) Ss-lp-lag (Gh)

Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Small to large pebbles; very coarse-grain to granular matrix
Sorting & Texture	Low sphericity; sub-angular/rounded; poorly sorted
Set Thickness	0.02 - 0.03 m
Facies Association	Bedload migration
Architectural Elements	Downstream-accretion (Sandy bedform)

Interpretation

Facies Ss-lp-lag; pebble lag along base of poorly defined bed implies rapid deposition (flood event) over a relatively short period of time. Lag deposits may also represent: i. an erosive channel scour deposits; ii. winnowing processes; iii. basal flood deposits and high-flow stage; and iv. may also denote the location of the channel thalweg, where large bedforms may develop. General facies interpretation - Lag of small to large pebbles; coarse-grained to granular sandstone (sandy bedform).

Key Facies Characteristics

1. General line of small to large pebble lag deposits
2. Pebble lags vary in thickness from 0.02 to 0.03 m
3. The 08° dip and 340° azimuth relating to the pebble lag implies a northerly palaeocurrent and a southerly sediment provenance
4. Poorly defined sandstone bed deposits imply relatively rapid deposition facilitated by comparatively high palaeoflow
5. Poorly defined cross-bedding (e.g. foresets) suggests relatively rapid deposition facilitated by comparatively high palaeoflow
6. Reference point of expanded view for facies Ss-lp-lag
7. Numerous small to large sized pebbles located along base of set

Location: Brimham Rocks - SE 20676 64751

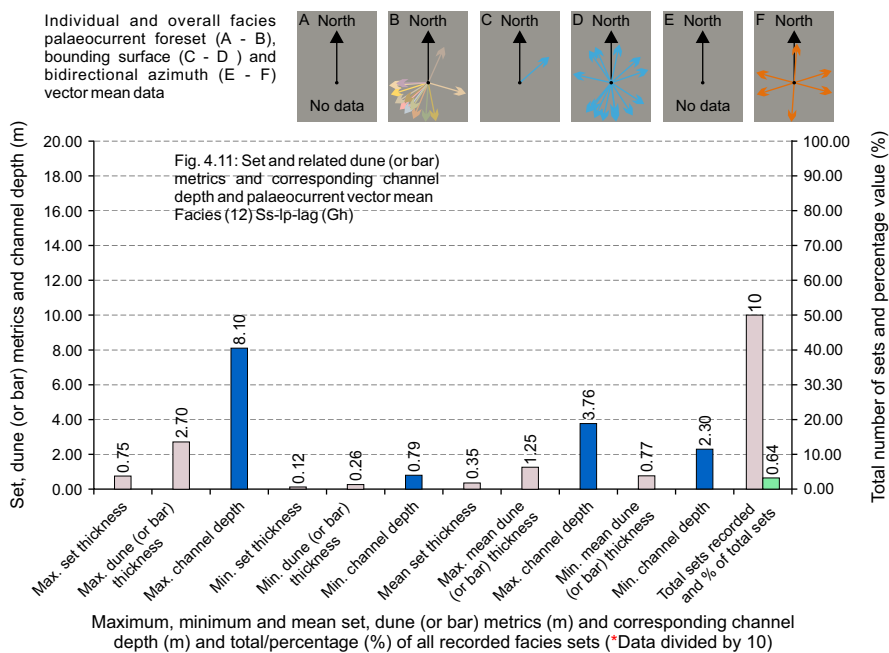
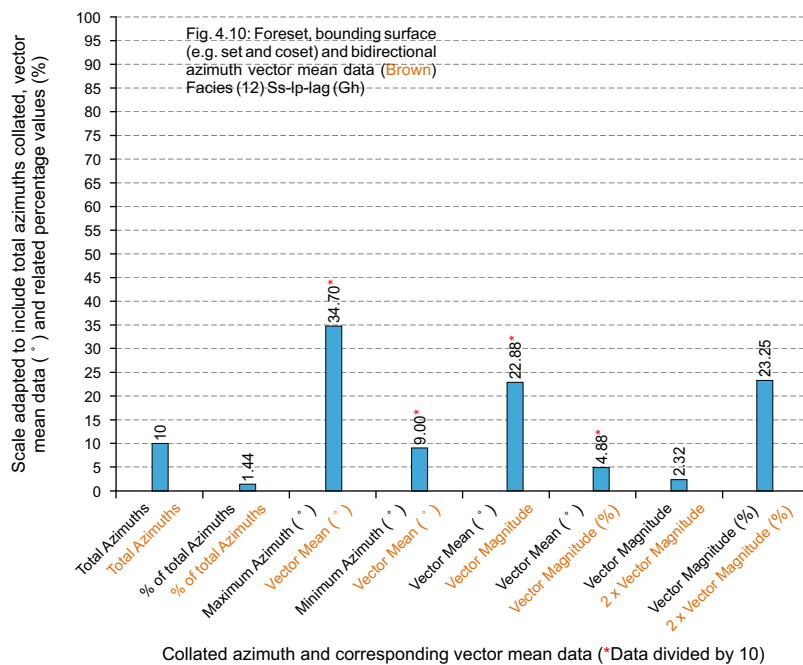
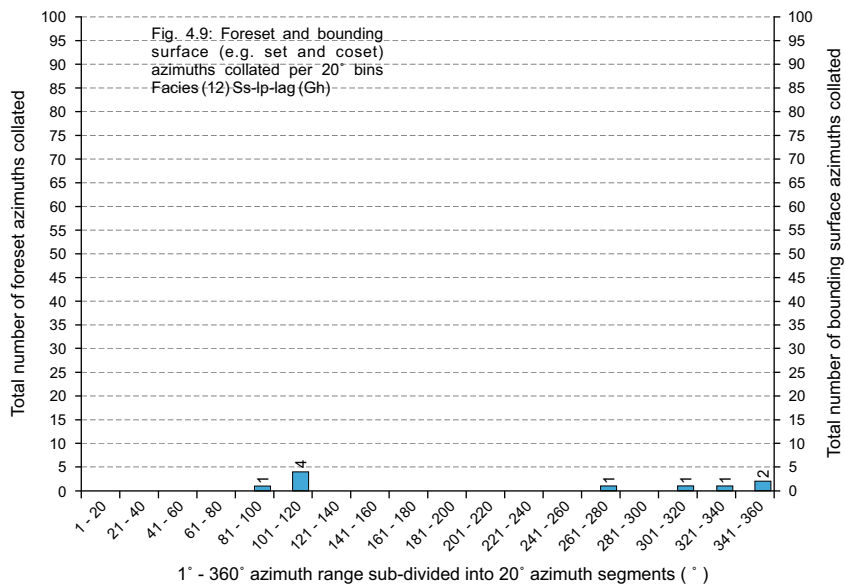
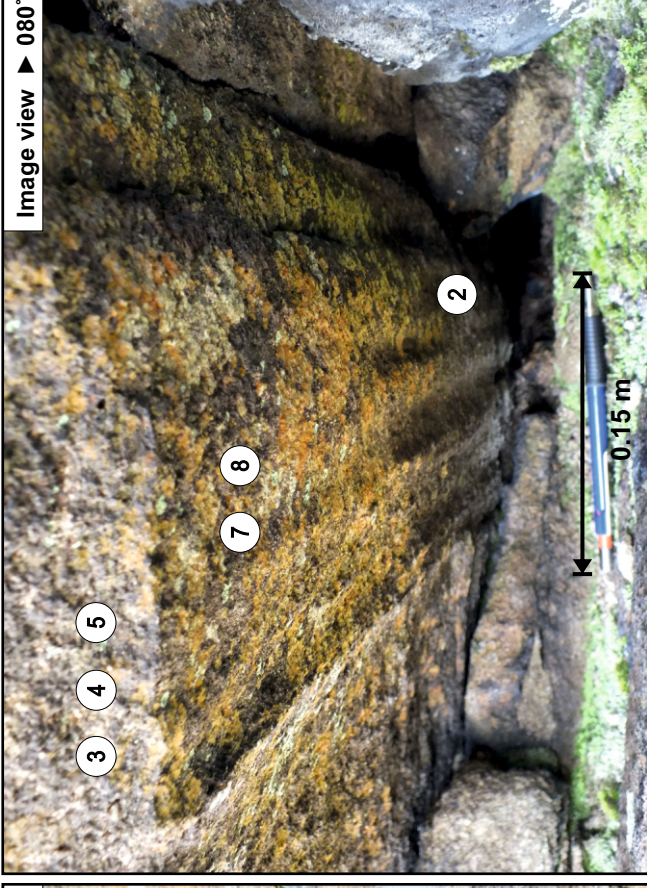


Fig. 4.8: (13) Sfp (Sf)



Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Coarse-grained to granular sandstone
Sorting & Texture	Low-high sphericity; sub-angular/rounded; poorly sorted
Set Thickness	0.10-0.15 m
Facies Association	Channel fill
Architectural Elements	Downstream-accretion (Sandy bedform)

Interpretation

Facies Sfp; the host bedding likely represents migration and net accretion of 3D mesoforms within a relatively shallow thalweg region of a low sinuosity channel, or bar top, influenced by waning flow, net sediment aggradation and channel fill. Evidence of channel fill is provided by the fossilised plant remnants throughout the facies which implies that the fluvial channel was sufficiently shallow to entrap plant debris prior to being encased by subsequent sediment deposits which facilitated fossil preservation; if propagated locally the presence of vegetation would have promoted channel bank and/or channel bar stability. General facies interpretation - Fossilised plant remnants; medium-grained to granular sandstone (sandy bedform); <10% pebbles.

Key Facies Characteristics

1. Unknown disarticulated fossilised plant remnant trending 100° - 280°
2. Unknown disarticulated fossilised plant remnant trending 080° - 260°
3. Host sets consist of small-scale trough cross-bedding
4. ~0.90 m thick host coset consisting of cross-cutting sets
5. Predominantly coarse-grained to granular sandstone host
6. ~0.30 m wide section of a relatively coarse and irregular trunk/stem section
7. ~0.15 m wide section of a relatively smooth and linear trunk/stem section
8. The relatively coarse bark, trunk and/or stem size and texture implies that the local environment and climate, at the time, had probably promoted the growth of vegetation

Location: High Bishopside - SE 15846 67483

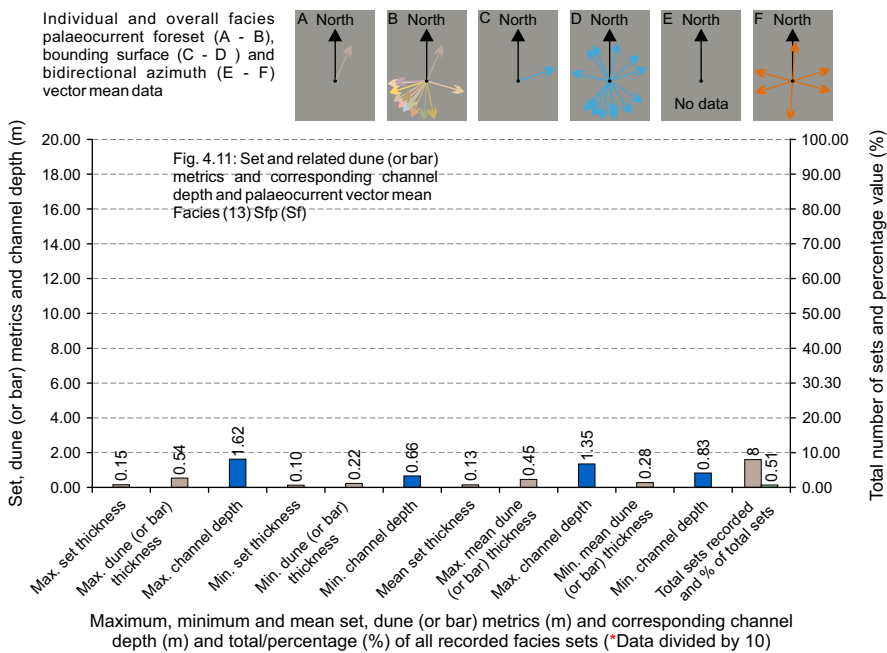
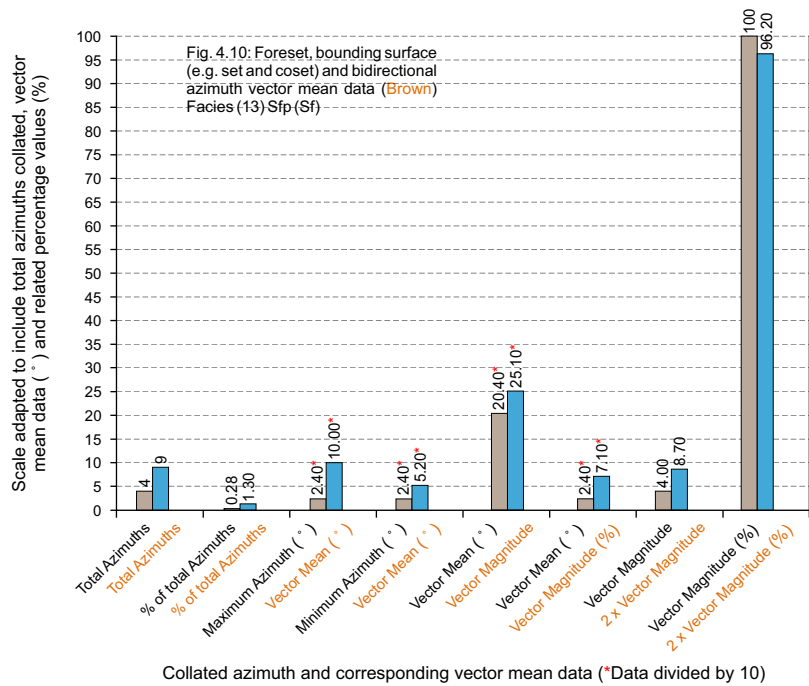
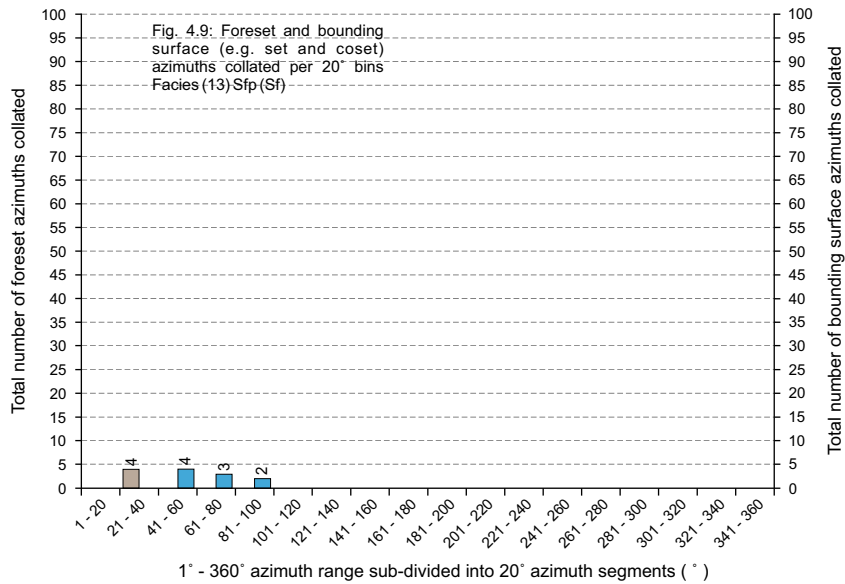
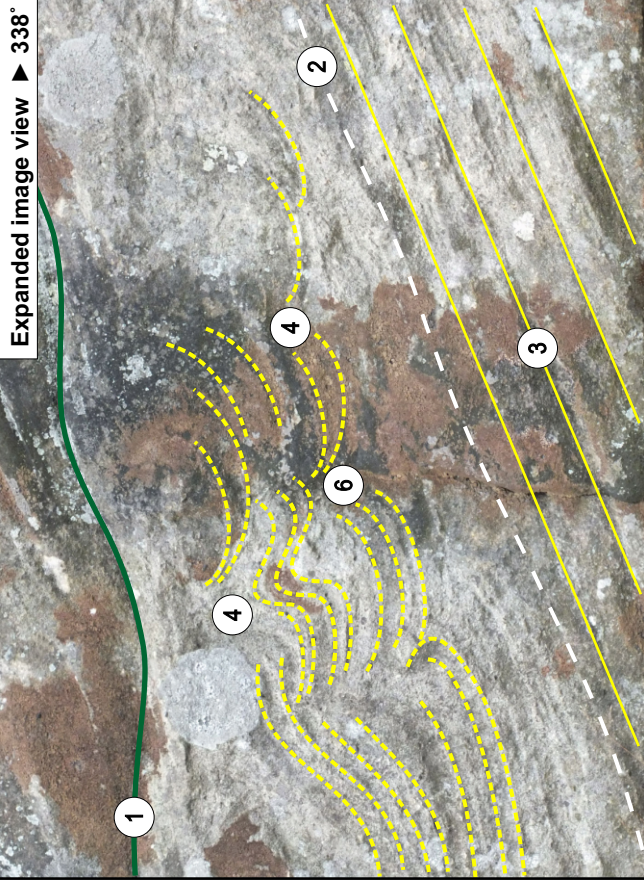
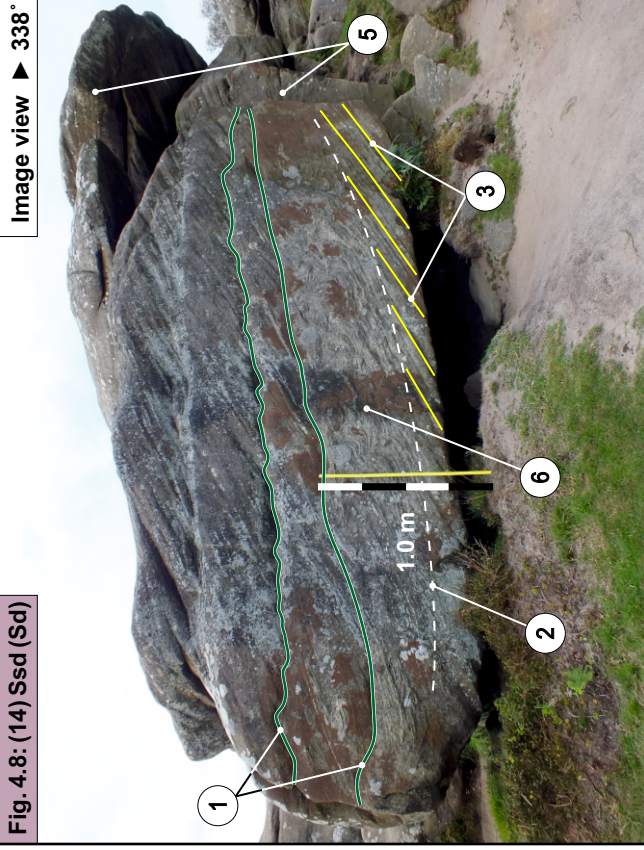


Fig. 4.8: (14) Ssd (Sd)



Key Facies Information

Colour	Light grey/beige (Weathered surface)
Grain-size	Medium to coarse-grained sandstone; 2-5% pebbles
Sorting & Texture	High sphericity; well rounded; very well sorted
Set Thickness	~0.75 m
Facies Association	Channel fill
Architectural Elements	Sandy bedform (Sand flat)

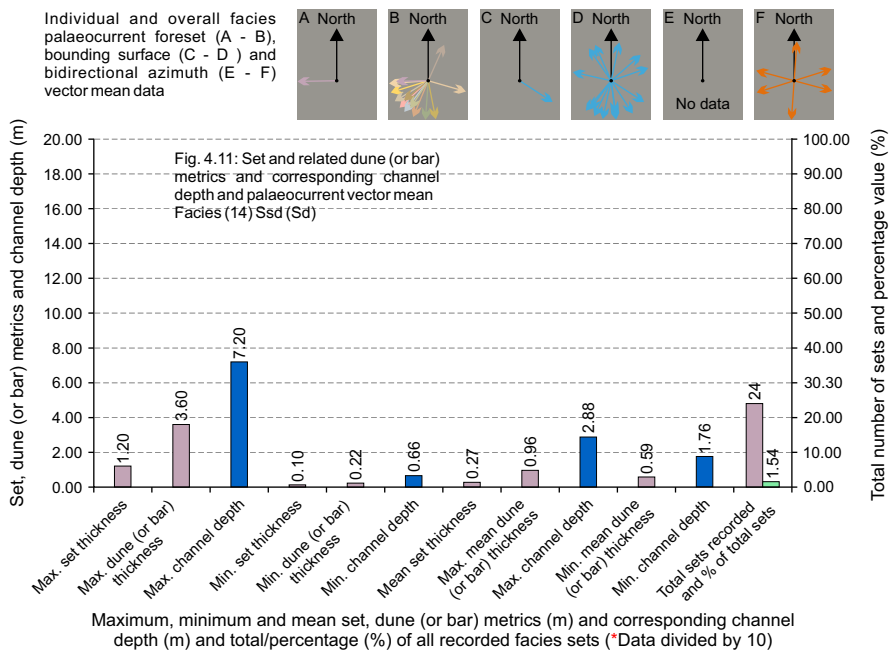
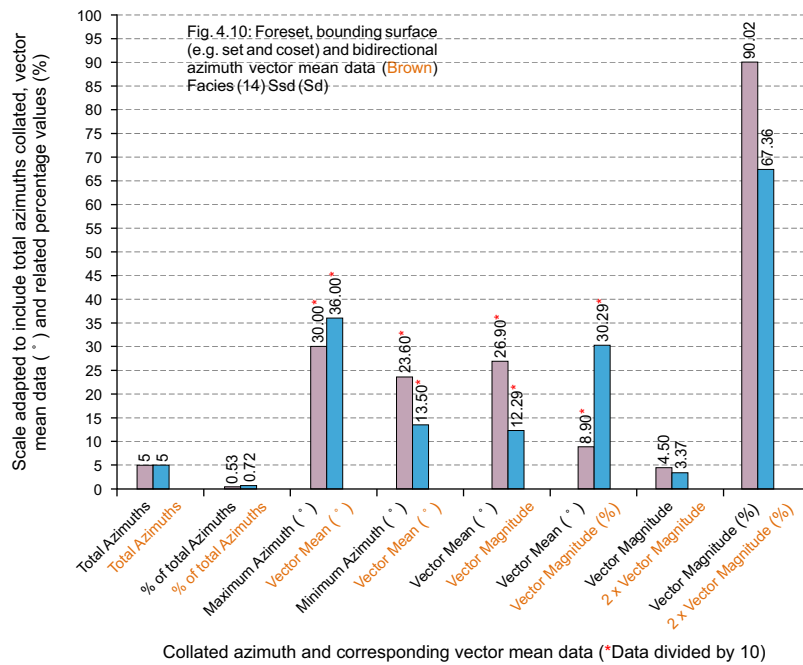
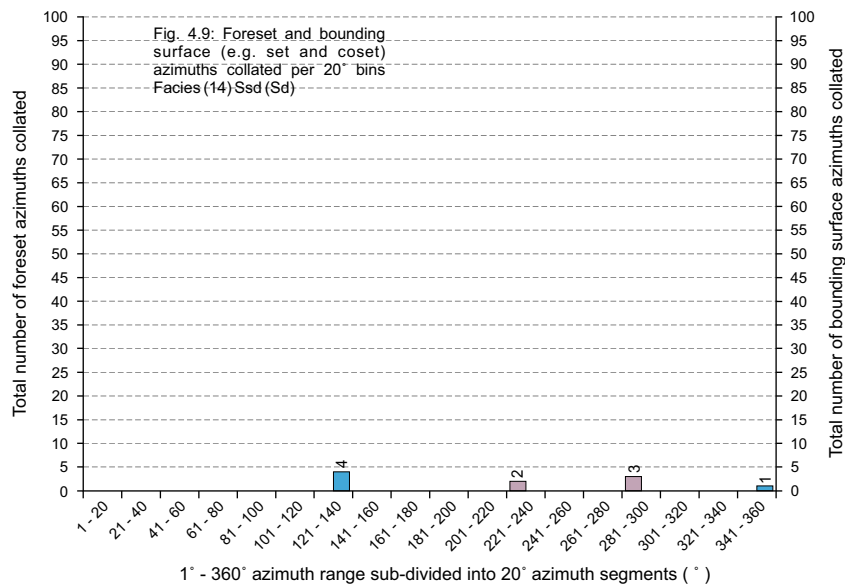
Interpretation

Facies Ssd; evidence of soft sediment deformation (i.e. dish and flame structures) implies loss of grain stability (liquefaction) within unconsolidated water laden sediments, probably facilitated by a sudden overburden through rapid sediment deposition post flood and/or syn-sedimentary tectonic activity post deposition. Undeformed cross-bedding suggests that the original facies probably consisted of predominantly planar cross-bedding which may have formed sand flat components. General facies interpretation - Soft sediment deformation (liquefaction); medium-grained to granular sandstone (sandy bedform); <10% pebbles.

Key Facies Characteristics

1. First-order set bounding surfaces highlighting extent of horizontal dune sets. Lower boundary exhibits signs of sinking into underlying set producing a wavy contact; indication of soft sediment deformation (liquefaction)
2. Lower deformation boundary, soft sediment deformation concentrated within the middle and upper section of set
3. Preserved foresets indicate that the original primary sedimentary structure consisted of planar cross-bedding
4. Soft sediment deformation consisting of poorly defined flame and disk like structures; remnants of original foresets are preserved as distinct ridges
5. Fragmented nature of outcrop suggests that sections, if not all, of the outcrop are/is disarticulated
6. Reference point of expanded view for facies Ssd

Location: Brimham Rocks - SE 20778 64914



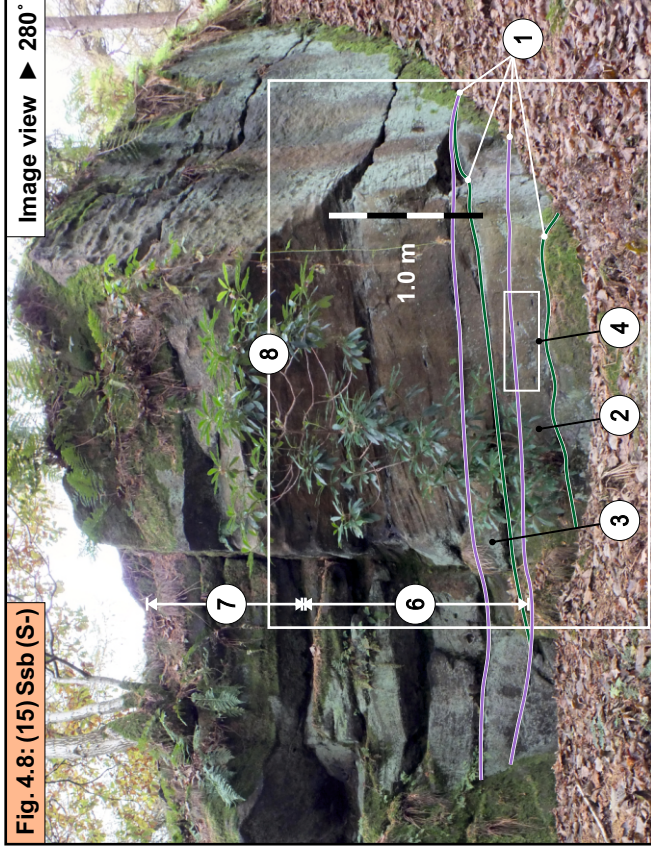
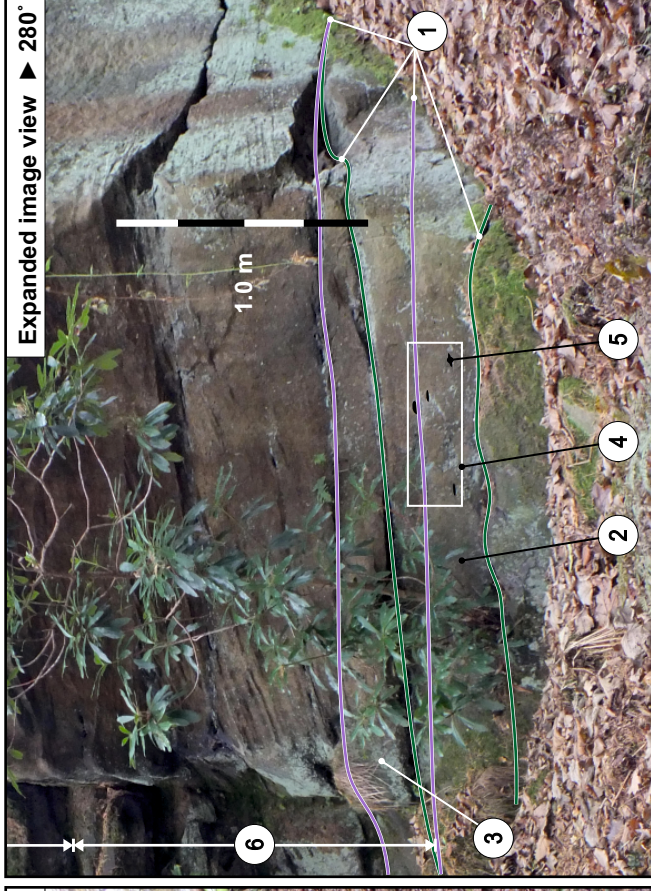


Fig. 4.8: (15) Ssb (S-)



Expanded image view ▶ 280°

Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Coarse to very coarse-grained sandstone; 2% pebbles
Sorting & Texture	High sphericity; sub-angular/rounded; moderate/well sorted
Set Thickness	~0.30 m
Facies Association	Bedload migration
Architectural Elements	Downstream-accretion (Sandy bedform)

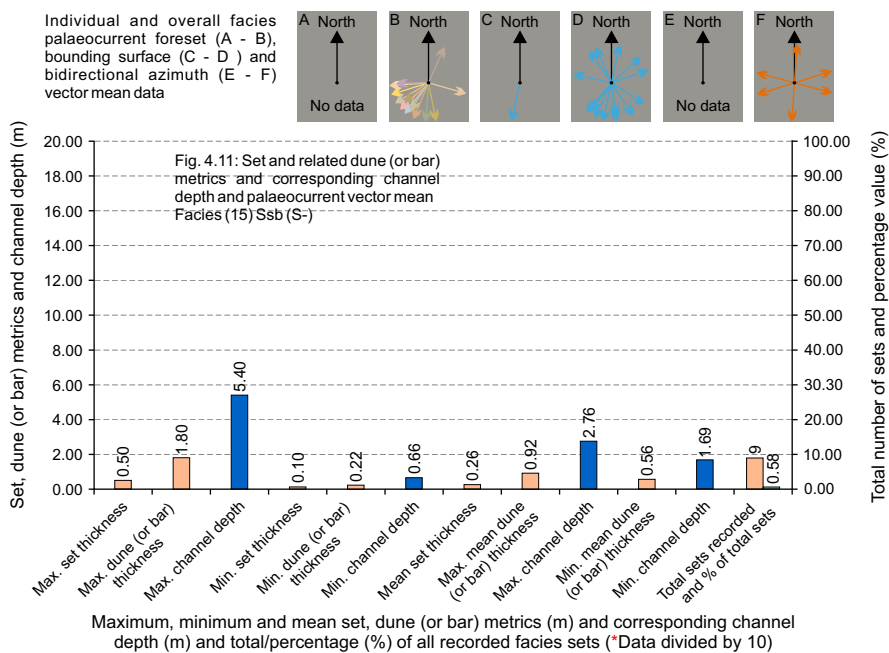
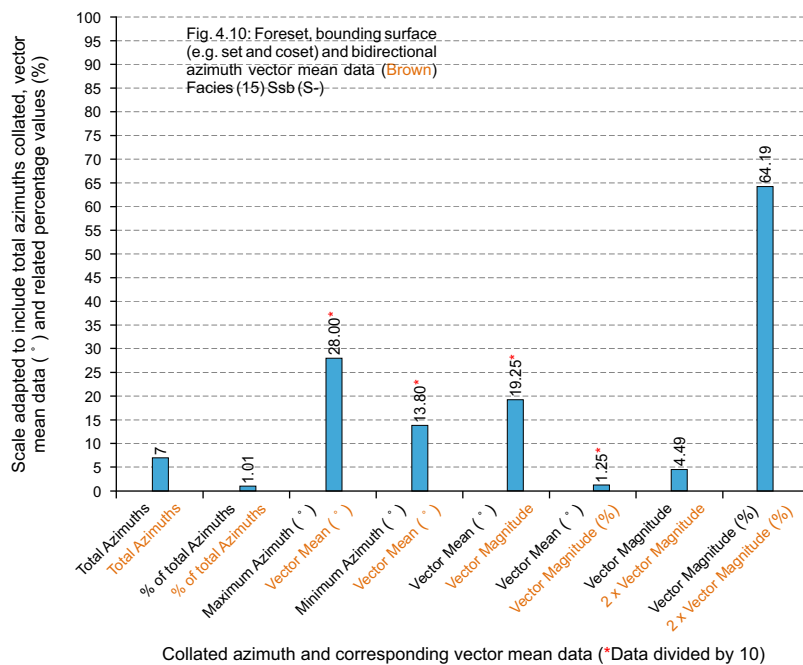
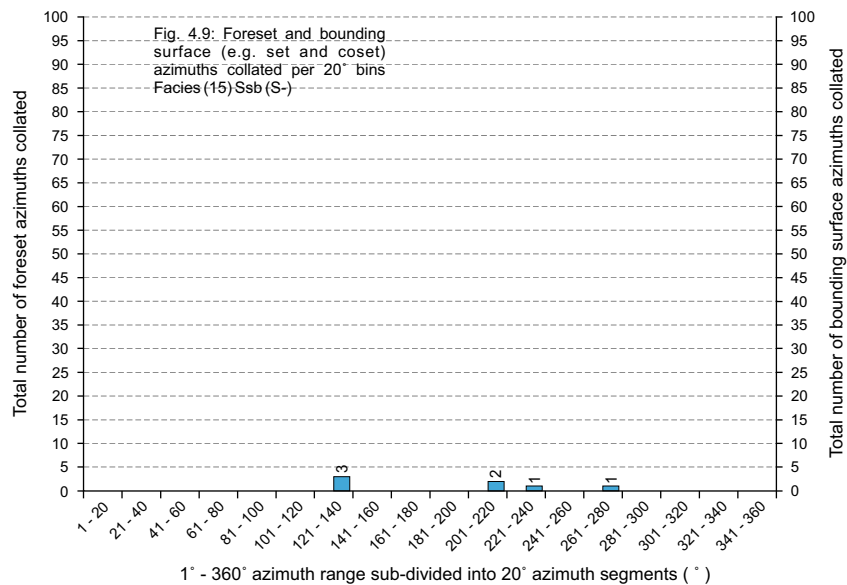
Interpretation

Facies Ssb, the relatively coarse grain size, texture, apparent lack of any obvious internal structures (e.g. foreset detail) and possible presence of rip-up clast cavities suggest deposition was influenced by a relatively sudden decrease in channel flow capacity and rapid sediment deposition during waning flow and initial (basal) channel fill, probably towards the channel thalweg region during a flood event. General facies interpretation - Structureless bed; medium-grained to granular sandstone (sandy bedform); <10% pebbles.

Key Facies Characteristics

1. First-order set (green) and second-order coset (plum) bounding surfaces highlighting extent of underlying Ssb facies and overlying SI-hpx <2.0 m facies boundaries
2. Coset of facies Ssb
3. Coset of facies SI-hpx <2.0 m
4. Area of rip-up clast cavities
5. Rip-up clast cavities up to 0.06 m in length and 0.01 m high
6. Cosets of facies SI-hpx <2.0 m may represent sand flat components
7. Cosets of facies SI-hss <1.0 m may represent migrating bar or dune components
8. Area of expanded view for facies Ssb

Location: Jeffery Crags - SE 23038 65422



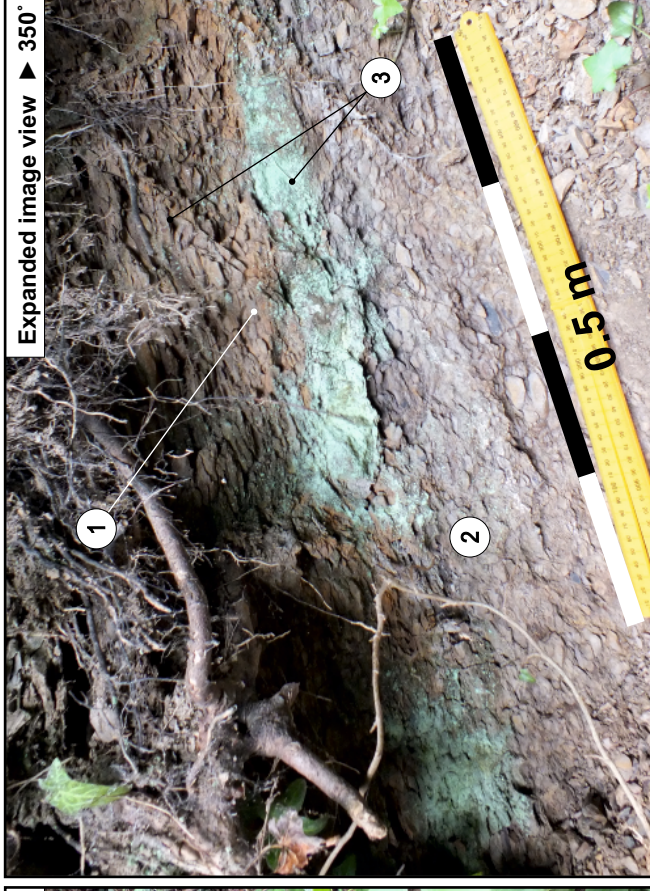


Fig. 4.8: (16) Sh-I (FI)

Image view ▶ 350°

Expanded image view ▶ 350°

Key Facies Information

Colour	Light grey (Weathered surface)
Grain-size	Mud/clay sized particles
Sorting & Texture	High sphericity; well rounded; very well sorted
Set Thickness	~0.005 m thick laminations
Facies Association	Bedload migration
Architectural Elements	Downstream-accretion (Sandy bedform)

Interpretation

Facies Sh-I; generally, shales possess a finely laminated and fissile structure (absent in mudstones) and grey shales possess little or no organic matter, whilst black shales possess relatively higher levels of organic matter. Therefore, the observed fissile and friable laminations and grey colouring indicate the presence of shale and that there is little or no preserved organic matter within the shale. Such sediments were likely deposited in an oxic environment (e.g. fresh flowing water), rather than a stagnant anoxic environment associated with black shales. General facies interpretation - Shale bed; laminated fines; primarily mud (e.g. clay and silt sized particles; grey to black coloured rock represent low to high levels of organic matter preservation, respectively.

Key Facies Characteristics

1. Facies Sh-I
2. ~0.005 m thick laminations - predominantly fragmented fissile and friable laminations
3. Predominantly grey laminations with evidence of weathering
4. No obvious palaeocurrent features present
5. Host unit is ~1.50 m thick (only part of the exposure is depicted, mainly due to covering from vegetation)
6. Area of expanded view for facies Sh-I

Location: High Mill-Shaw Mills - SE 25282 62696