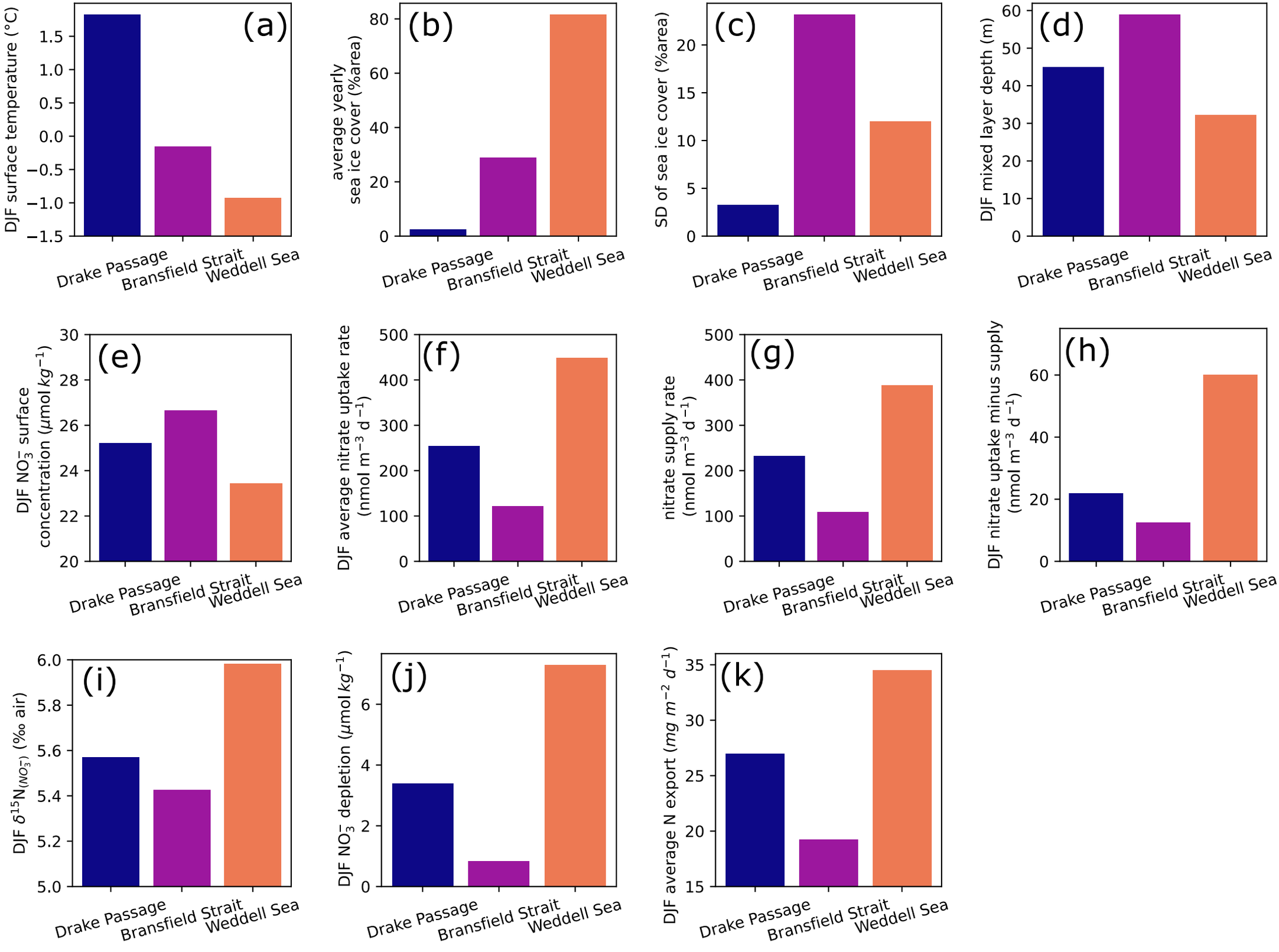
(a)
DJF surface temperature (°C)
1.5
1.0
0.5
0.0
−0.5
−1.0
−1.5
(b)
average yearly sea ice cover (%area)
80
60
40
20
0
(c)
SD of sea ice cover (%area)
20
15
10
5
0
(d)
DJF mixed layer depth (m)
60
50
40
30
20
10
0
(e)
DJF NO_3^- surface concentration (μmol kg^{-1})
30
28
26
24
22
20
(f)
DJF average nitrate uptake rate (nmol m^{-3} d^{-1})
500
400
300
200
100
0
(g)
nitrate supply rate (nmol m^{-3} d^{-1})
500
400
300
200
100
0
(h)
DJF nitrate uptake minus supply (nmol m^{-3} d^{-1})
60
40
20
0
(i)
DJF $\delta^{15}N_{(NO_3^-)}$ (‰ air)
6.0
5.8
5.6
5.4
5.2
5.0
(j)
DJF NO_3^- depletion (μmol kg^{-1})
6
4
2
0
(k)
DJF average N export ($mg\ m^{-2}\ d^{-1}$)
35
30
25
20
15
Drake Passage
Bransfield Strait
Weddell Sea