Urchin-barren to algal-dominated state

■ Ecological processes

■ Climate-driven changes

□ Over-exploitation of natural resources

■ Management interventions

□ Final configuration event

Alg-, Urc+, Lob-, Aba-, Oct+, Fis+, Mgt+ (urchin-barren)

to

Alg+, Urc-, Lob+, Aba*, Oct*, Fis*, Mgt* (algal-dominated)

(a) Event structure with ids.

(b) Event structure with labels.

(c) Pathway structure with ids.

(d) Pathway structure with labels.

Figure 1: First set of configurations (9) leading to Algal dominated states from Urchin barren state.

R22 (e4), R3 (e5), R9 (e9)

R22 (e4), R3 (e5), R11 (e11), R22 (e674), R9 (e690)

R21 (e3), R9 (e6), R12 (e13), R22 (e25), R3 (e624)

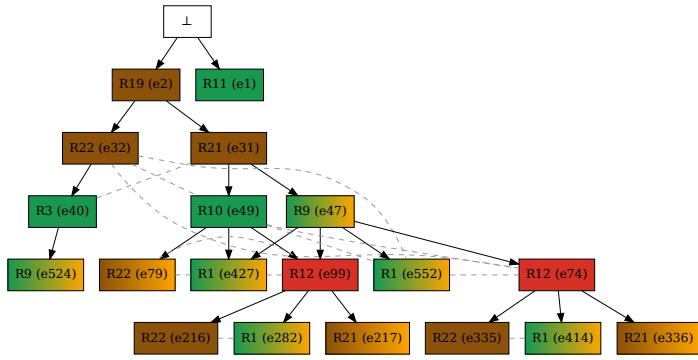R21 (e3), R9 (e6), R12 (e13), R22 (e25), R21 (e660)

R21 (e3), R22 (e4), R9 (e6)

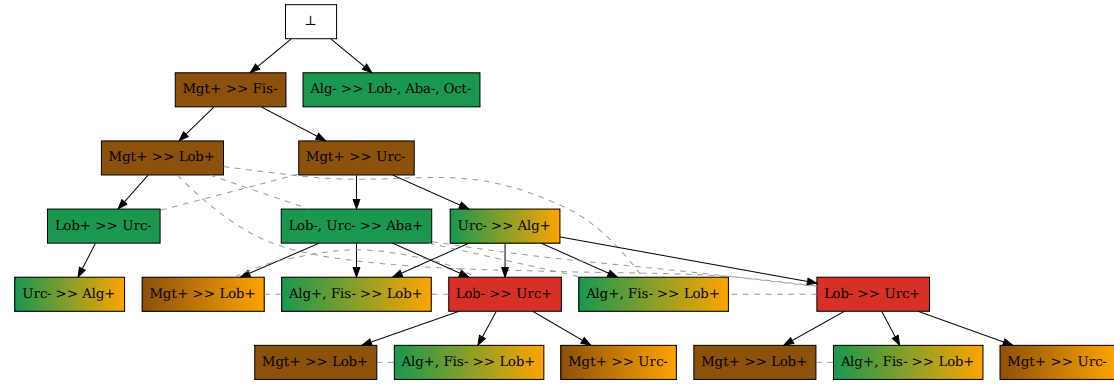R21 (e3), R9 (e6), R10 (e7), R22 (e16)

R21 (e3), R9 (e6), R10 (e7), R12 (e22), R22 (e45), R3 (e530)

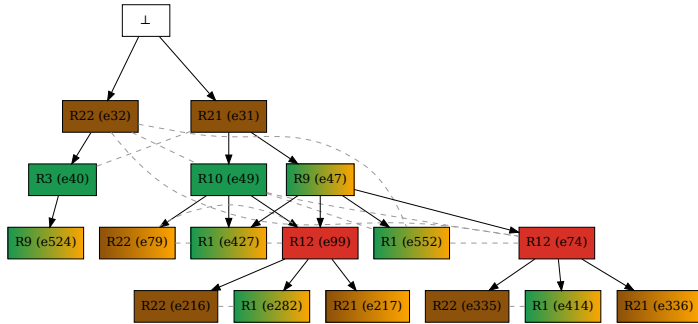R21 (e3), R9 (e6), R10 (e7), R12 (e22), R22 (e45), R21 (e598)
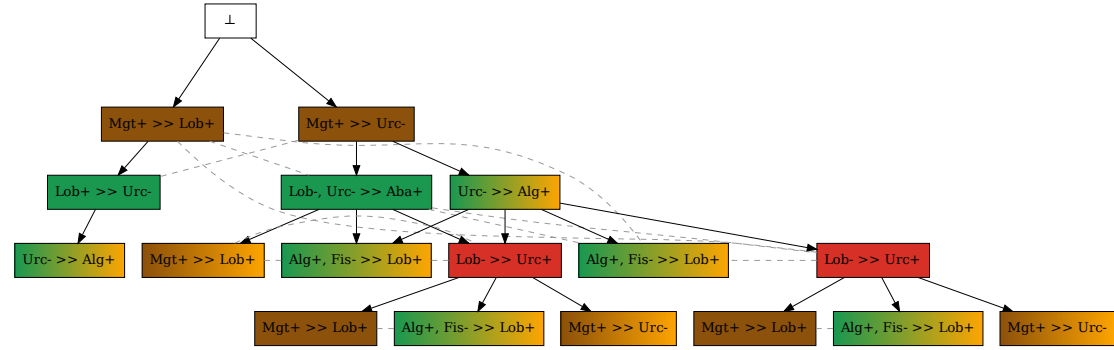
R11 (e1), R22 (e8), R3 (e10), R9 (e21)

(a) Event structure with ids.

(b) Event structure with labels.

(c) Pathway structure with ids.

(d) Pathway structure with labels.

Figure 2: Second set of configurations (9) leading to Algal dominated states from Urchin barren state.

R11 (e1), R19 (e2), R21 (e31), R22 (e32), R9 (e47)

R11 (e1), R19 (e2), R21 (e31), R9 (e47), R10 (e49), R22 (e79)

R11 (e1), R19 (e2), R22 (e32), R3 (e40), R9 (e524)

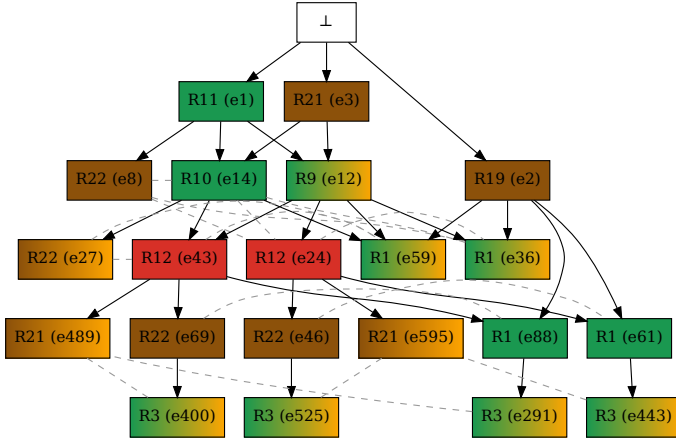R11 (e1), R19 (e2), R21 (e31), R9 (e47), R10 (e49), R12 (e99), R22 (e216), R21 (e217)

R11 (e1), R19 (e2), R21 (e31), R9 (e47), R12 (e74), R22 (e335), R21 (e336)

R11 (e1), R19 (e2), R21 (e31), R9 (e47), R10 (e49), R12 (e99), R21 (e217), R1 (e282)
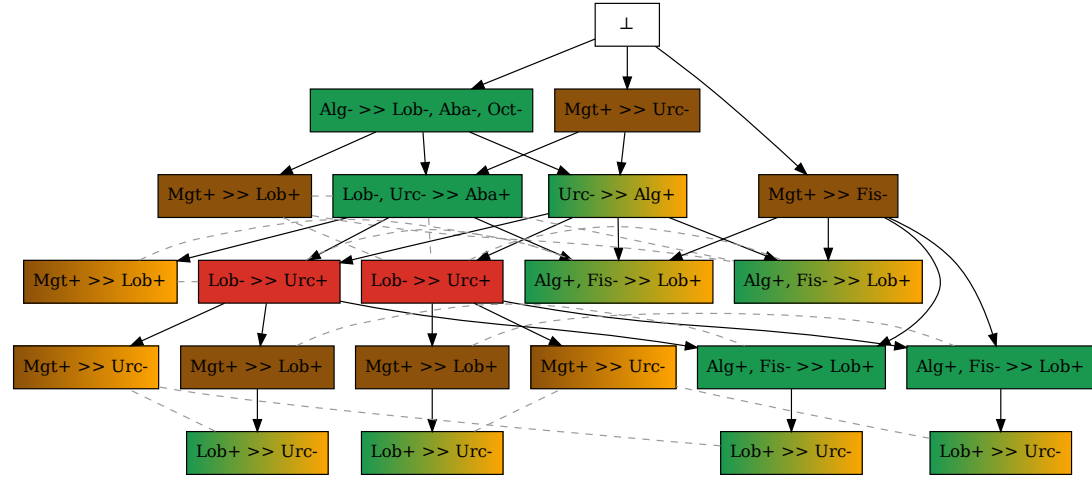
R11 (e1), R19 (e2), R21 (e31), R9 (e47), R10 (e49), R1 (e427)

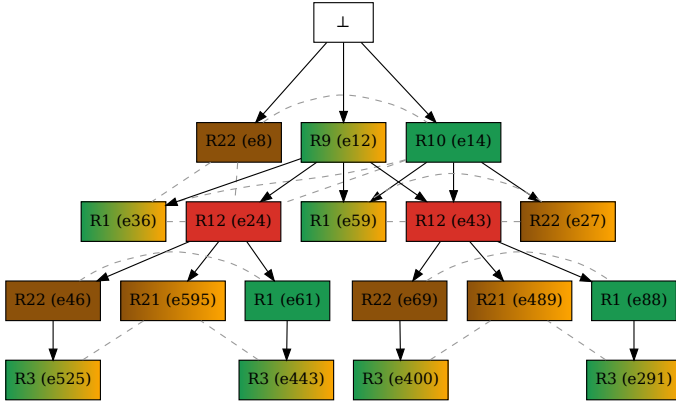R11 (e1), R19 (e2), R21 (e31), R9 (e47), R12 (e74), R21 (e336), R1 (e414)

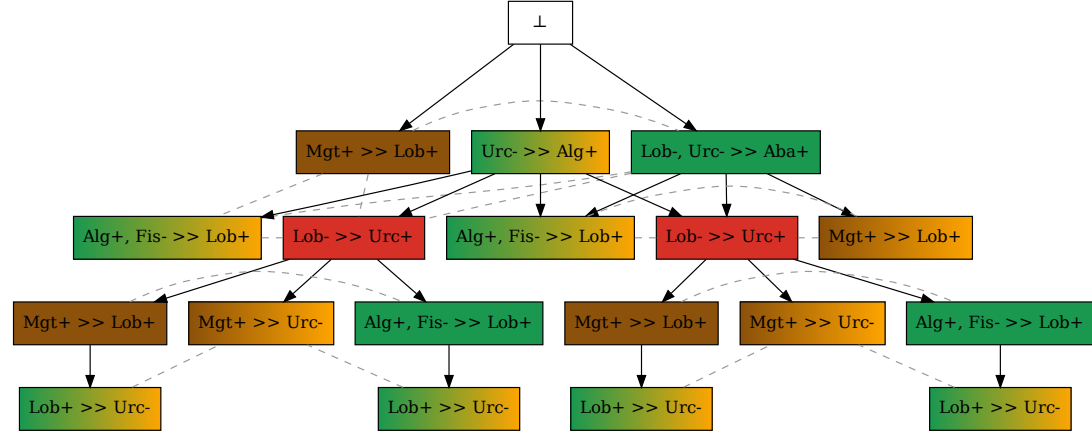R11 (e1), R19 (e2), R21 (e31), R9 (e47), R1 (e552)

(a) Event structure with ids.
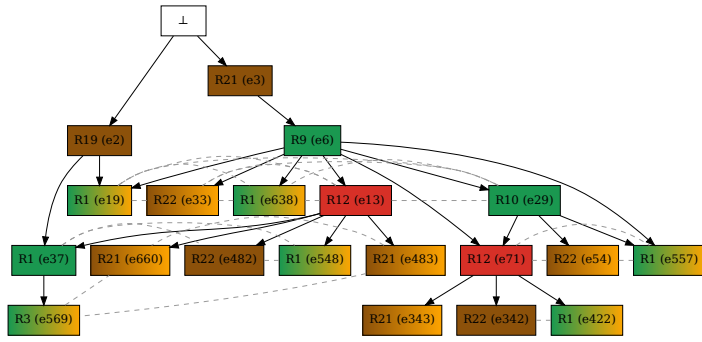
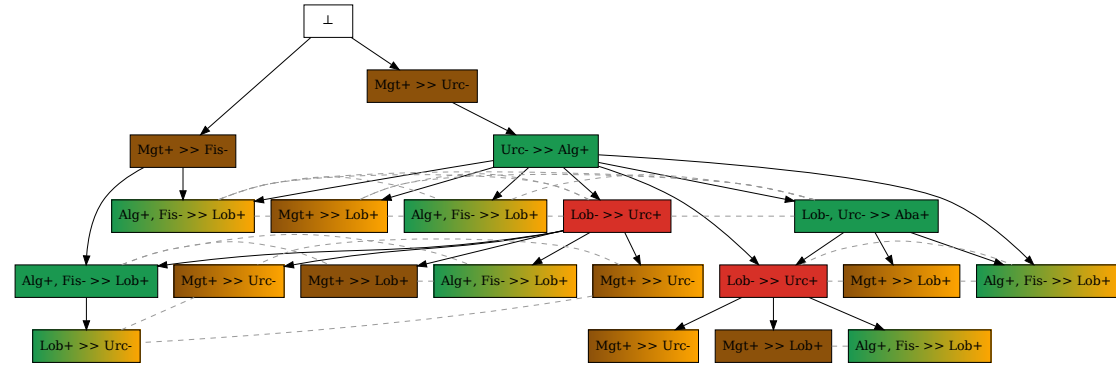(b) Event structure with labels.

(c) Pathway structure with ids.

(d) Pathway structure with labels.

Figure 3: Third set of configurations (12) leading to Algal dominated states from Urchin barren state.
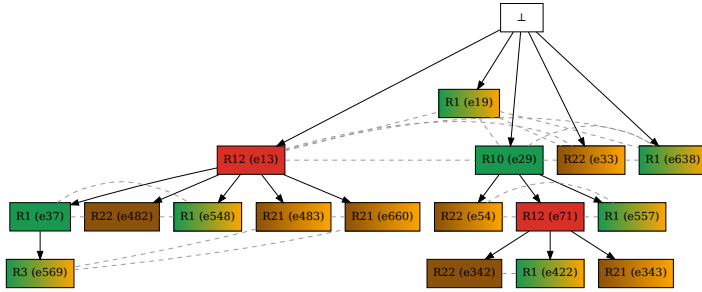
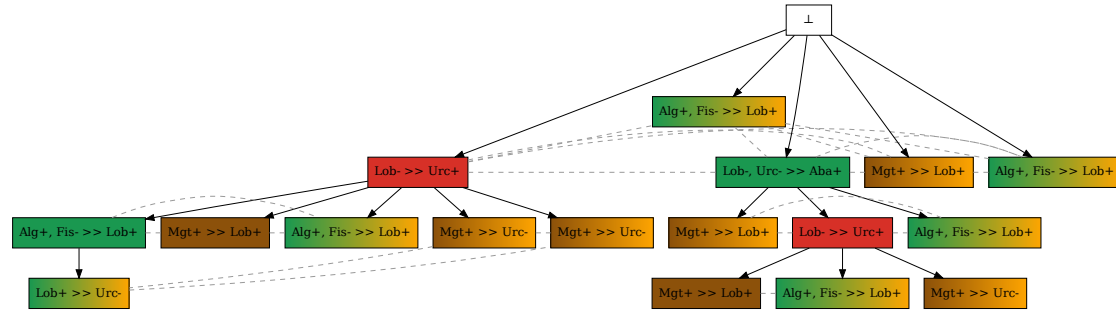|	
R11 (e1), R19 (e2), R21 (e3), R9 (e12), R1 (e36)	R11 (e1), R19 (e2), R21 (e3), R9 (e12), R10 (e14), R1 (e59)
R11 (e1), R19 (e2), R21 (e3), R9 (e12), R12 (e24), R1 (e61), R3 (e443)	R11 (e1), R19 (e2), R21 (e3), R9 (e12), R12 (e24), R1 (e61), R21 (e595)
R11 (e1), R19 (e2), R21 (e3), R9 (e12), R10 (e14), R12 (e43), R1 (e88), R3 (e291)	R11 (e1), R19 (e2), R21 (e3), R9 (e12), R10 (e14), R12 (e43), R1 (e88), R21 (e489)
R11 (e1), R21 (e3), R9 (e12), R10 (e14), R22 (e27)	R11 (e1), R21 (e3), R22 (e8), R9 (e12)
R11 (e1), R21 (e3), R9 (e12), R10 (e14), R12 (e43), R22 (e69), R21 (e489)	R11 (e1), R21 (e3), R9 (e12), R12 (e24), R22 (e46), R21 (e595)
R11 (e1), R21 (e3), R9 (e12), R10 (e14), R12 (e43), R22 (e69), R3 (e400)	R11 (e1), R21 (e3), R9 (e12), R12 (e24), R22 (e46), R3 (e525)

3

(a) Event structure with ids.

(b) Event structure with labels.

(c) Pathway structure with ids.

(d) Pathway structure with labels.

Figure 4: Fourth set of configurations (11) leading to Algal dominated states from Urchin barren state.

R19 (e2), R21 (e3), R9 (e6), R22 (e33)

R19 (e2), R21 (e3), R9 (e6), R10 (e29), R22 (e54)

R19 (e2), R21 (e3), R9 (e6), R10 (e29), R12 (e71), R22 (e342), R21 (e343)

R19 (e2), R21 (e3), R9 (e6), R10 (e29), R12 (e71), R21 (e343), R1 (e422)

R19 (e2), R21 (e3), R9 (e6), R10 (e29), R1 (e557)

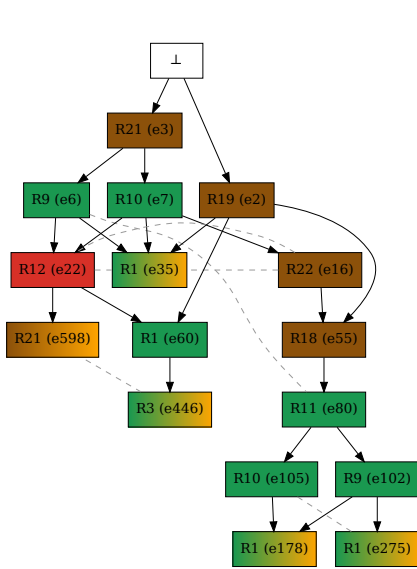R19 (e2), R21 (e3), R9 (e6), R1 (e638)

R19 (e2), R21 (e3), R9 (e6), R1 (e19)

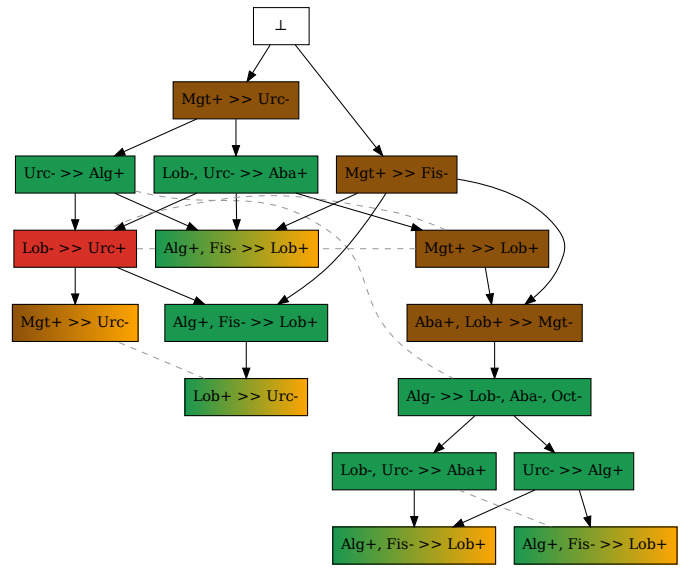R19 (e2), R21 (e3), R9 (e6), R12 (e13), R1 (e37), R21 (e660)

R19 (e2), R21 (e3), R9 (e6), R12 (e13), R22 (e482), R21 (e483)

R19 (e2), R21 (e3), R9 (e6), R12 (e13), R21 (e483), R1 (e548)
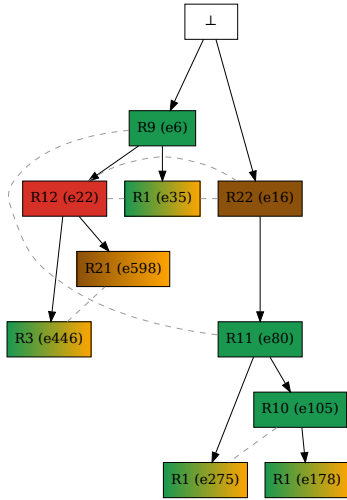
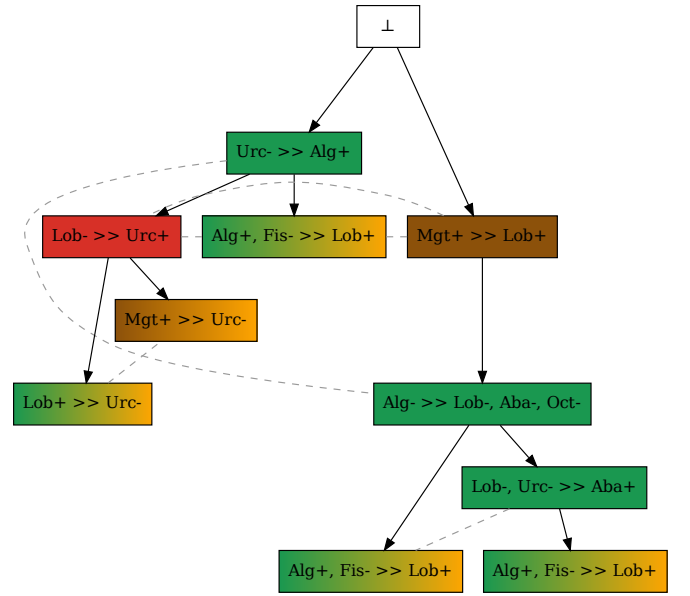R19 (e2), R21 (e3), R9 (e6), R12 (e13), R1 (e37), R3 (e569)

(a) Event structure with ids.

(b) Event structure with labels.

(c) Pathway structure with ids.

(d) Pathway structure with labels.

Figure 5: Fifth set of configurations (5) leading to Algal dominated states from Urchin barren state.

R19 (e2), R21 (e3), R9 (e6), R10 (e7), R1 (e35)

R19 (e2), R21 (e3), R9 (e6), R10 (e7), R12 (e22), R1 (e60), R21 (e598)

R19 (e2), R21 (e3), R9 (e6), R10 (e7), R12 (e22), R1 (e60), R3 (e446)

R19 (e2), R21 (e3), R10 (e7), R22 (e16), R18 (e55), R11 (e80), R9 (e102), R10 (e105), R1 (e178)

R19 (e2), R21 (e3), R10 (e7), R22 (e16), R18 (e55), R11 (e80), R9 (e102), R1 (e275)