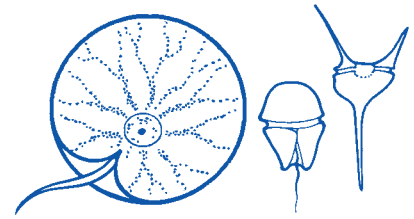


# Ol algae we oli save mekem problem

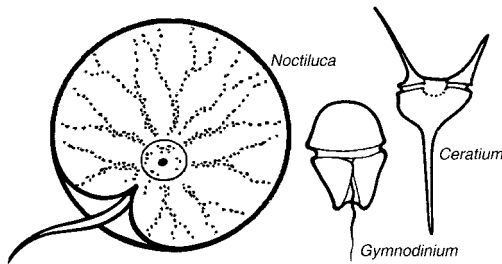
(Harmful algal blooms)



## Ol algal bloom, oli wanem?

Solwota, mo espeseli klosap long kos, i gat long hem plante smolsmol plant we oli stap flot we nem blong olgeta i phytoplankton (yu singaotem olsem: fae-tow-plank-ton). Pikja antap hemi soem sam eksampol blong wan impoten grup. Oli mekem ol pikja i kam bigwan we i bigwan, ol samting ia oli smol olgeta. Phytoplankton long lefhan saed, *noctiluca*, hemi i bigwan bitim plante long olgeta, olsem 1 milimita. Plante taem hem nao i mekem ol smolsmol laet we yu save luk bihaen long yu taem yu stap long wan bot we i muv long naet.

Plante long ol smolsmol plant ia oli no save mekem problem mo oli impoten olsem kakae blong plante nara animol long solwota. Be samtaem ol namba blong olgeta i go antap bigwan kwiktaem mo yumi givim nem long samting ia algal bloom.



## Wanem nao i ol harmful algal bloom?

I gat sam fiu long ol phytoplankton we oli prodiusim ol strong posen mo taem namba blong olgeta i go antap oli talem se i wan harmful algal bloom o HAB.

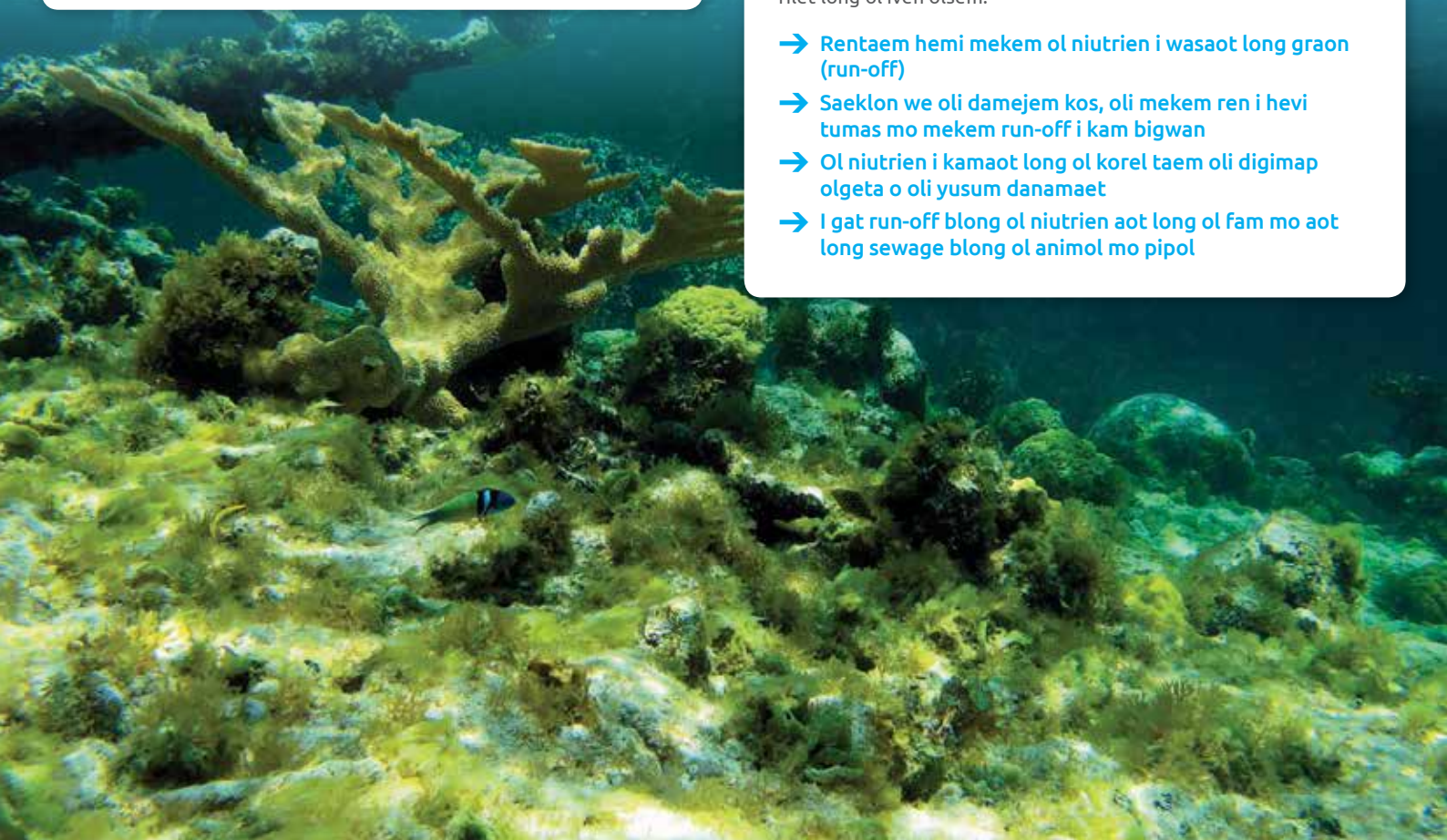
Memba blong grup long pikja antap (dinoflagellates) plante taem oli kam tugeta long ol harmful algal bloom we oli kilim ol fis mo selfis, maet long wan stret fasin o from oli prodiusim ol posen we i blokem ol gill, o from i katemdaon hamas oxygen i gat long wota.

## From wanem i gat ol harmful algal bloom?

Olsem ol nara plant, ol phytoplankton oli nidim laet blong san mo ol niutrien blong gru mo mekem namba blong olgeta i go antap – ol niutrien i ol kaen samting we ol animol mo plant oli nidim olsem kakae. Tufala niutrien we ol phytoplankton i mas gat nem blong tufala i nitrogen mo phosphorous, mo tufala i stap, be smolsmol nomo, long solwota.

Be samtaem ol niutrien long solwota blong kos oli go antap bigwan we i save mekem ol harmful algal bloom i kam antap. Long ol aelan kaontri blong Pasifik, maet hae kwantiti blong niutrien i rilet long ol iven olsem:

- Rentaem hemi mekem ol niutrien i wasaot long graon (run-off)
- Saeklon we oli damejem kos, oli mekem ren i hevi tumas mo mekem run-off i kam bigwan
- Ol niutrien i kamaot long ol korel taem oli digimap olgeta o oli yusum danamaet
- I gat run-off blong ol niutrien aot long ol fam mo aot long sewage blong ol animol mo pipol





## Wanem nao ol ifek blong ol harmful algal bloom?

HAB oli save givim sam kaen sik long ol pipol. Ol selfis olsem natalae, masel mo oista oli tekem sam long ol posen phytoplankton olsem kakae aot long solwota we i pas tru long olgeta. Ol pipol we oli kakae ol selfis ia oli kasem wan sik nem blong hem Paralytic Shellfish Poisoning we i mekem bodi blong olgeta i haf-ded, mo oli stap traot mo samtaem maet oli save ded.

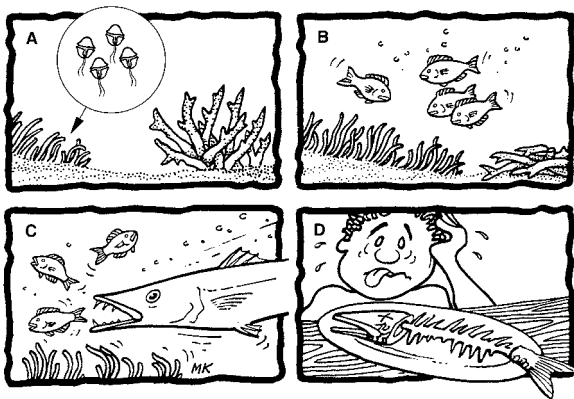
I gat sam HAB we oli produisim ol posen we i save spoelem ol pipol we oli stap swim mo wokbaot long laen blong so nomo. Wan kaen posen phytoplankton (*Karenia brevis*) hemi afektem ol man ples mo olgeta turis long taem we oli stap pulum win mo semtaem tekem ikam insaed long olgeta ol posen we i stap insaed long smok blong solwota – from samting ia maet oli harem se skin blong olgeta i muvmuv, hed i raon, oli no save pulum win gud mo oli stap kof.

HAB we i komon bitim ol nara wan long ol aelan kaontri blong Pasifik hemi hemia we i produisim

Ciguatera Fish Poisoning. Pikja daon hemi soem wan katun we oli yusum blong mekem ol pipol oli luksave denja blong sik ia. Olgeta wanwan pikja we i soem i olsem:

- Ol posen phytoplankton (maet sam spisis we oli difren, i inkludim *Gambierdiscus toxicus*) yu save faenem plante taem long ol bed blong si gras.
- Namba blong ol niutrien we i go antap (olsem wan eksampol, maet oli bin kamaot long ol korel we i damej) i mekem se namba blong posen phytoplankton i go antap bigwan. Ol smol fis we oli stap kakae long si gras oli tekem plante long ol posen ia i go insaed long bodi blong olgeta
- Ol fis we i mo bigwan we oli kakae ol smolsmol fis oli tekem insaed long olgeta plante mo long posen ia. Ol posen oli kasem ol level we i denjares tumas long sam fis olsem sam long ol redmaot, rif snapa, barakuta, nama-rae, bigfala manngru mo sam nara wan.
- Ol pipol we oli kakae ol fis we i gat posen long olgeta oli kasem sik ia ciguatera. Olgeta oli gat ol problem olsem oli harem se bodi i haf ded, mit i stap soa, mo i gat wan difren kaen fasin we oli harem se wan kol samting i hot taem oli tajem, mo wan hot samting i kolkol. Sapos posen ia i strong tumas, man i save ded from, from hemi no save gohed blong pulum win.

Tingting se maet fis i save gat posen long hem i mekem i had blong salem ol kaen fis olsem. Sori tumas, be no mata we i gat plante kastom tingting long saed blong ciguatera, i no gat eni stret fasin, we i no sas mo yu save dipen long hem, blong yu save testem wan fis blong faenemaot sapos hemi gat posen insaed long hem o no. Wan komon bilif i olsem: yu save luk se wan fis i gat posen ia sapos yu livim wan pis blong hem blong letem ol flae i sidaon long hem – sapos ol flae i no wantem kam klosap long hem i minim se fis ia i gat posen. Wan nara bilif i olsem: sapos yu putum wan pis mani we i silva long fis mo pis mani ia i go blak, fis ia i no sef blong kakae. Sori tumas, tufala test ia, mo plante nara wan we ol man i trastem olgeta, i no save wok.



## Hao nao yu save katemdaon namba blong ol harmful algal blooms (HABs)?

Yu save katemdaon namba blong sam HABs sapos yu kontrolem hamas niutrien i go insaed long solwota. Oli luk se men sos blong ol niutrien i go long ol solwota long kos i sewage blong ol pipol mo ol animol blong fam long ol ples we sistem blong manejem sewerage i no gud tumas – oli luk se hemia i wan bigfala problem tumas long ol atol we graon wota mo solwota long lagun i save spoel isi nomo..

Rabis wota we i aot long ol ples blong tritim sewage mo wota we i kamaot long septik tang (tang we i stap anda long graon we ol bacteria oli brekemdaon sewage ia) i no mas go insaed long ol riva o solwota long kos. Long sam ples, oli bin planem ol banana o nara kaen krop klosap long ol ples we kaen rabis wota ia i kamaot long hem mo oli ting se ol plant i yusum ol niutrien ia bifo oli save kasem solwota. Wan nara wei hemi blong mekem kompos wetem sewage blong ol pipol mo ol animol blong fam – long fasin ia, ol sistsit i stap go roten fastaem bifo oli yusum olsem fetelaesa blong ol plant we oli stap gru.

Oli mas protektem ol tri we oli gru klosap long ol riva mo long saed blong sanbis, mo long ol eria we i no gat tri oli mas planem bakegen. Najoral plant, we i inkludim ol natongtong we i gru klosap long laen blong so, olgeta oli yusum sam long ol niutrien bifo oli kasem solwota.

