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Wah a reef team find at 42 spot weh a satellite map point out inna Belize

Wah di field visit dem yield under three way fi judge a supervised coral map

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Wa di study find

A reef team can look fi sign seh coral did deh deh recent, living colony from any target species, or survivor from one species alone. Wi work over di published count fi 42 spot weh di team pick from a 2023 satellite map an visit inna June 2025. Di three rule give 28, 16 an three spot, inna dat order. Pon dat route it tek 14 visit fi every spot weh have living staghorn coral. Di calculation tell wi wah di visit dem yield. It cyaan tell wi wah share a all di colony weh survive di map find.

Weh di risorch a aks?

How di yield from di visit change when di team move from looking fi any sign a Acropora to looking fi living staghorn coral alone?

Data an metad

Greer an har colleagues train a random forest classifier pon satellite image near Coral Gardens after earlier survey a di reef [1, 2]. Dem pick spot weh dem coulda reach an weh di map show cluster a possible coral. Wi use di 42 model-selected spot inna di field result from [1]. Wi leave out di separate visit weh di local guide suggest. Di observation dem an di model come from di original research team.

Di broadest rule count living Acropora or a recently dead colony wid di skeleton still standing. Di second one require living Acropora from any species. Di third require living A. cervicornis, weh people call staghorn coral. Fi each rule, wi divide di number a spot weh qualify by 42. Flip dat fraction an yuh get visit per qualifying spot pon dis route.

Rizolt dem

Di broad rule count 28/42 spot (66.7%). Living Acropora turn up at 16/42 (38.1%). When wi require living tissue, di yield drop by 28.6 percentage point. Living staghorn turn up at 3/42 spot (7.1%). Di group dem overlap because every spot weh pass a tighter rule pass di broader one too.

Di team mek 1.50 visit fi each spot wid sign a coral, 2.63 fi each spot wid living Acropora an 14.00 fi each spot wid living staghorn. Pon di same route, di last search tek 9.33 times as many visit per qualifying spot as di first one. Di ratio dem count visit. Dem nuh measure hour, distance or fuel.

Share a di 42 spot weh meet each field rule

% a spot weh dem visit



All three bar use di same 42 spot weh di map pick. Di group dem overlap. Dem visit yah cyaan tell wi di detection rate fi di whole reef.

Wa di rizolt mean

A recently dead colony can help a team study coral death. A restoration crew weh a look fi living staghorn need a tighter target. Di same location mean something different fi each crew. Write down di species, living tissue an standing dead skeleton separate so both crew can use di record. Di original researchers find living coral too at spot weh dem local guide point out an weh di map miss [1].

Limit a di study

Di classifier use image from December 2023. Coral coulda dead or change condition before di team visit inna June 2025. Di count dem cyaan separate a mistake inna di 2023 map from a change after dat. How easy it was fi reach a spot an how di predicted coral group up affect di choice a site [1]. Fi measure accuracy across di whole reef, tally missed colony or see if di map do better dan a guide alone, wi woulda need a different sampling plan.

Run di analysis agen

Use di field visit result an discussion inna [1]. Keep di 42 spot weh di map pick.

Fi di three count, 28, 16 an 3, multiply each one by 100 an divide by 42. Round each percentage to one decimal place.

Divide 42 by each count fi get visit per qualifying spot. Divide 28 by 3 fi compare di tightest rule wid di broadest.

Data tiebl

Field rule	Scientific group	Spot weh meet di rule	Visit weh di map guide
Living or recently dead	Acropora spp.	28	42
Any living Acropora	Acropora spp.	16	42
Living staghorn	A. cervicornis	3	42

Suos dem

[1] Greer, Das, Foad & Wirth (2026). Supervised satellite classification and field validation document endangered Acropora collapse, and identify surviving colonies in Belize. Field reconnaissance results and Figure 6.

[2] Greer et al. (2020). Coral Gardens Reef, Belize: A refugium in the face of Caribbean-wide Acropora spp. coral decline.

Weh di data come fram

Greer, Das, Foad & Wirth (2026). Site counts; CAIA calculations. CC BY 4.0