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journées techniques DCE DOM

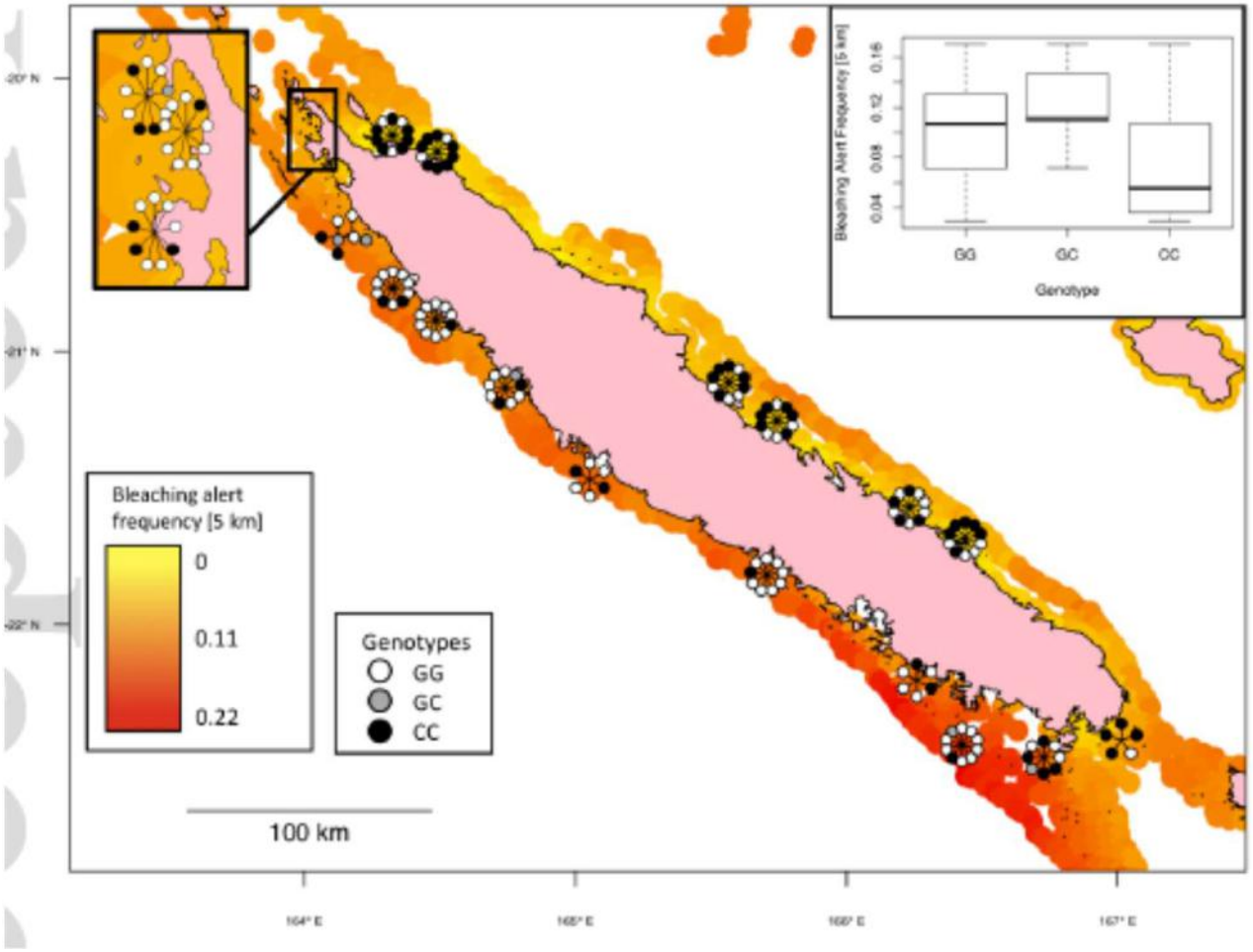
Projet PACO

Le Potentiel Adaptatif des Coraux en appui à la gestion des récifs coralliens des Antilles françaises et de Mayotte

Gaël Lecellier / Malika René-Trouillefou

Quelques rappels de la méthodologie de la Génomique Paysagère

Projet pilote SABLE
ICRI/UNEP



Selmoni O et al. Seascape genomics reveals candidate molecular targets of heat stress adaptation in three coral species. Mol Ecol. 2021;30: 1892–1906. doi:10.1111/mec.15857

nature COMMUNICATIONS

ARTICLE

https://doi.org/10.1038/s41467-022-28956-8 OPEN

Predictive models for the selection of thermally tolerant corals based on offspring survival

K. M. Quigley[1✉] & M. J. H. van Oppen[1,2]

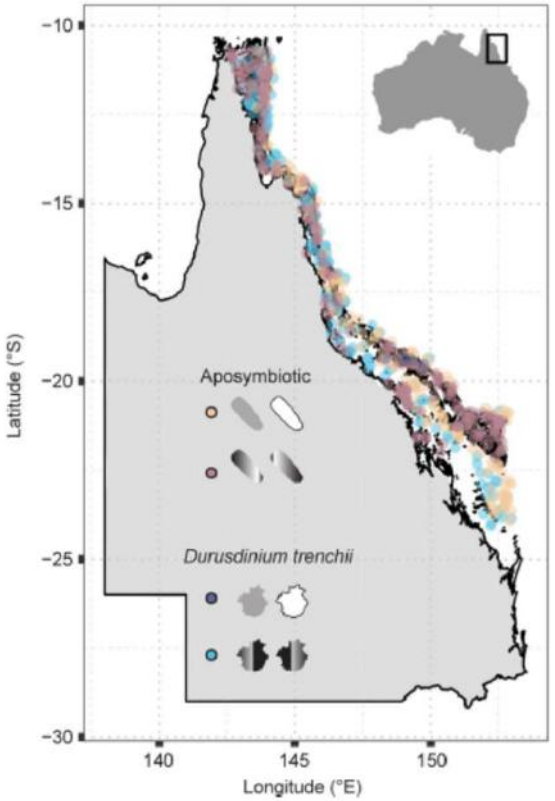
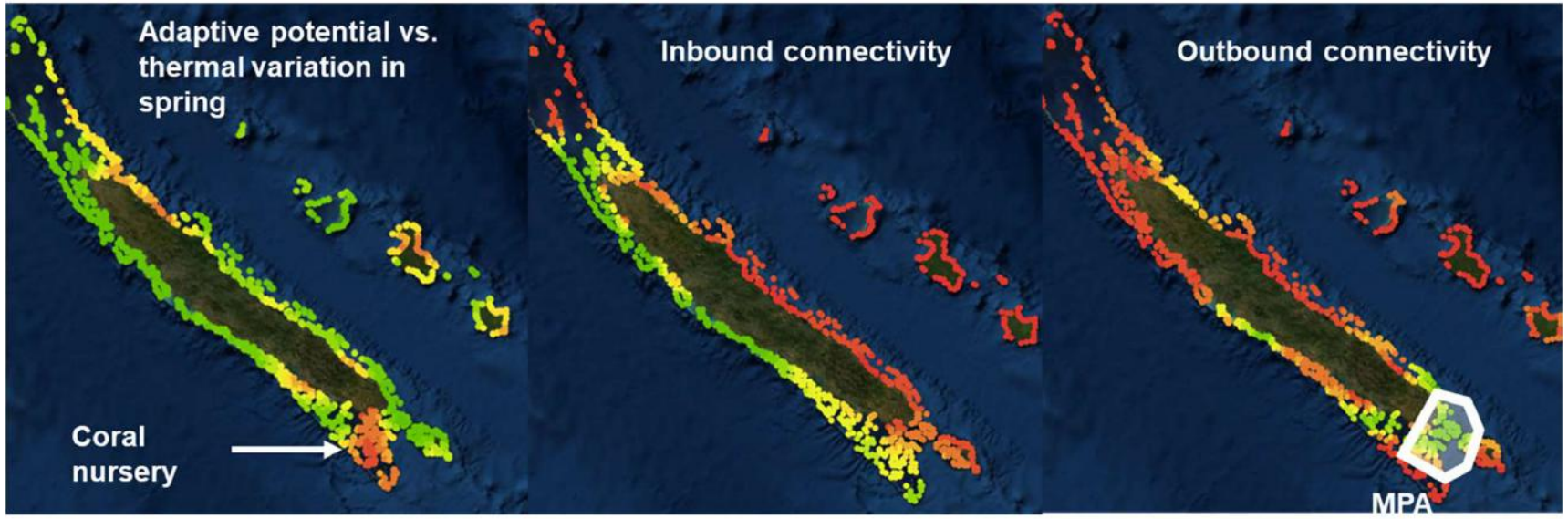
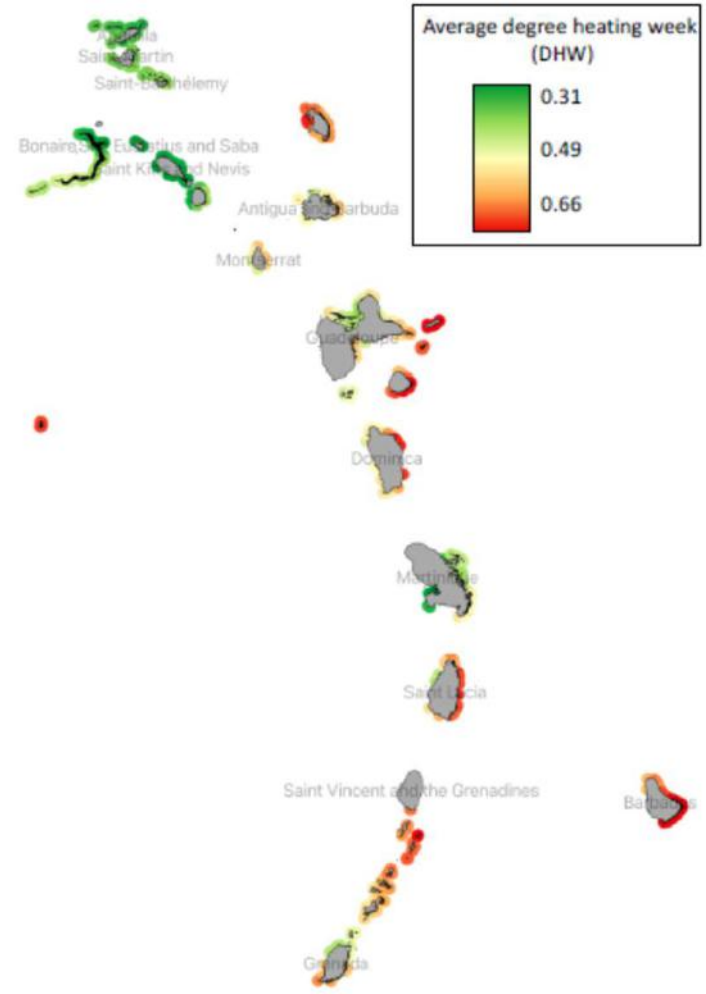
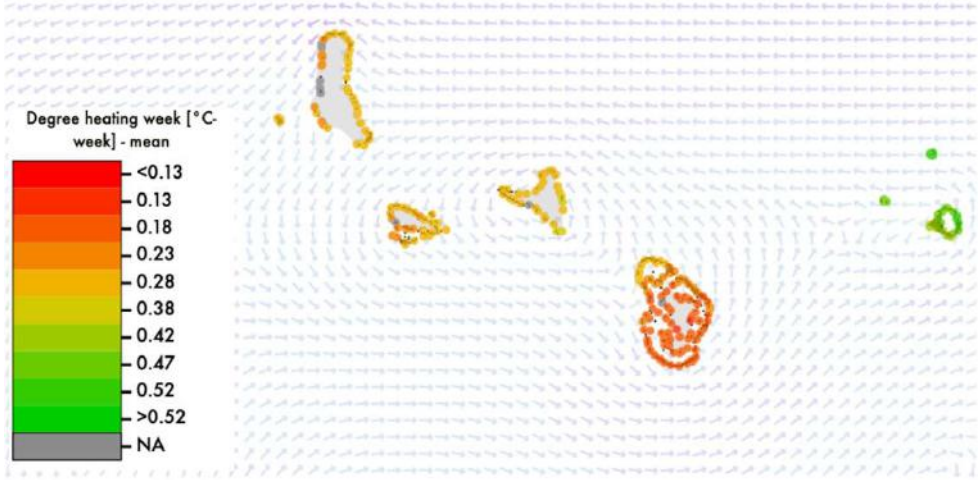


Fig. 5 Intrinsic resistance models identify hundreds of potential reefs as predicted sources of heat-tolerant adult corals able to produce offspring of optimal survival under heat stress. Model outputs are presented across four genetic and symbiotic combinations: (tan) purebred, aposymbiotic larvae, (pink) hybrid, aposymbiotic larvae, (purple) purebred juveniles infected with *D. trenchii* (D1a), (blue) hybrid juveniles infected with *D. trenchii*. Reef locations across the Great Barrier Reef (°South to °East) were calculated from intrinsic resistance models. Reef habitat environments were best characterized by the standard deviation of the thermal stress anomaly in degree heating weeks, daily temperature range, and average annual sea surface temperature.

Figure 8: Example of sites selection through. Left: probability of adaptation of *A. millepora* corals deduced from correlation between environmental parameters and frequency of a genetic variant (Micos 60). Center: Inbound connectivity. Right: outbound connectivity.




Average degree heating week (DHW)
0.31
0.49
0.66
Saint Martin
Saint-Barthélemy
Bonaire, Sint Eustatius and Saba
Saint Kitts and Nevis
Antigua and Barbuda
Montserrat
Guadeloupe
Dominica
Martinique
Saint Lucia
Saint Vincent and the Grenadines
Barbados
Grenada


Degree heating week [°C-week] - mean
<0.13
0.13
0.18
0.23
0.28
0.38
0.42
0.47
0.52
>0.52
NA