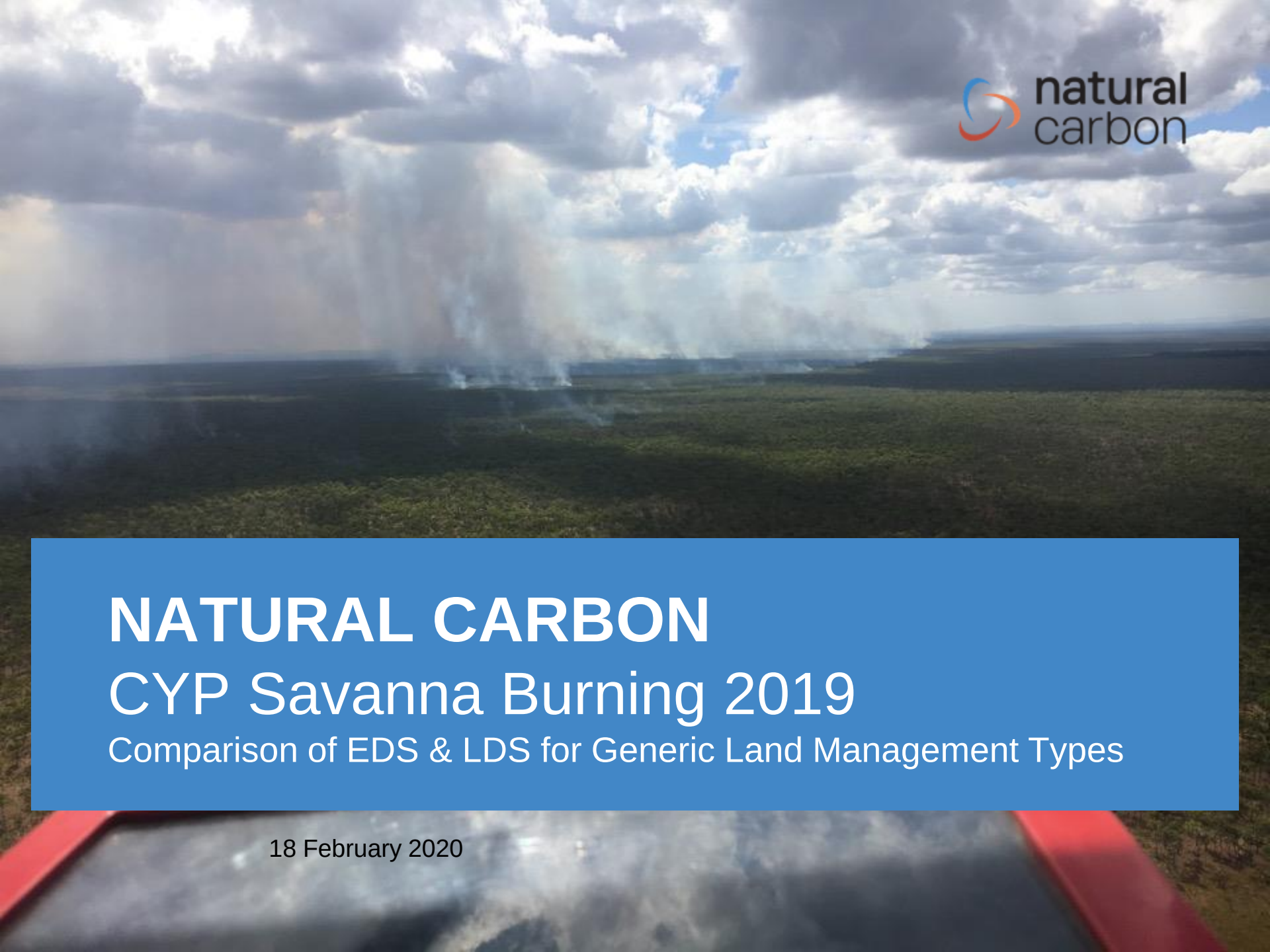


NATURAL CARBON

CYP Savanna Burning 2019

Comparison of EDS & LDS for Generic Land Management Types

18 February 2020

Our methods

Savanna burning

Herd Management

Human induced regeneration

Spotlight: CYP Savanna Burning 2019

Assumptions/Disclaimers

This was a brief study only, looking at 4 generic land management categories on Cape York Peninsula (CYP). The focus was not on individual properties or projects.

The intent of this presentation is to stimulate discussion around the importance of fire management intent in determining levels of carbon abatement. It is up to individual property managers to decide what is best practice for them and implement it. What is important is to learn lessons over time by using recent performance to re-assess priorities where appropriate.

The data analysis focussed on extracting general (not specific) trends since the adoption of ERF savanna burning projects on CYP, where projects first started in 2013.

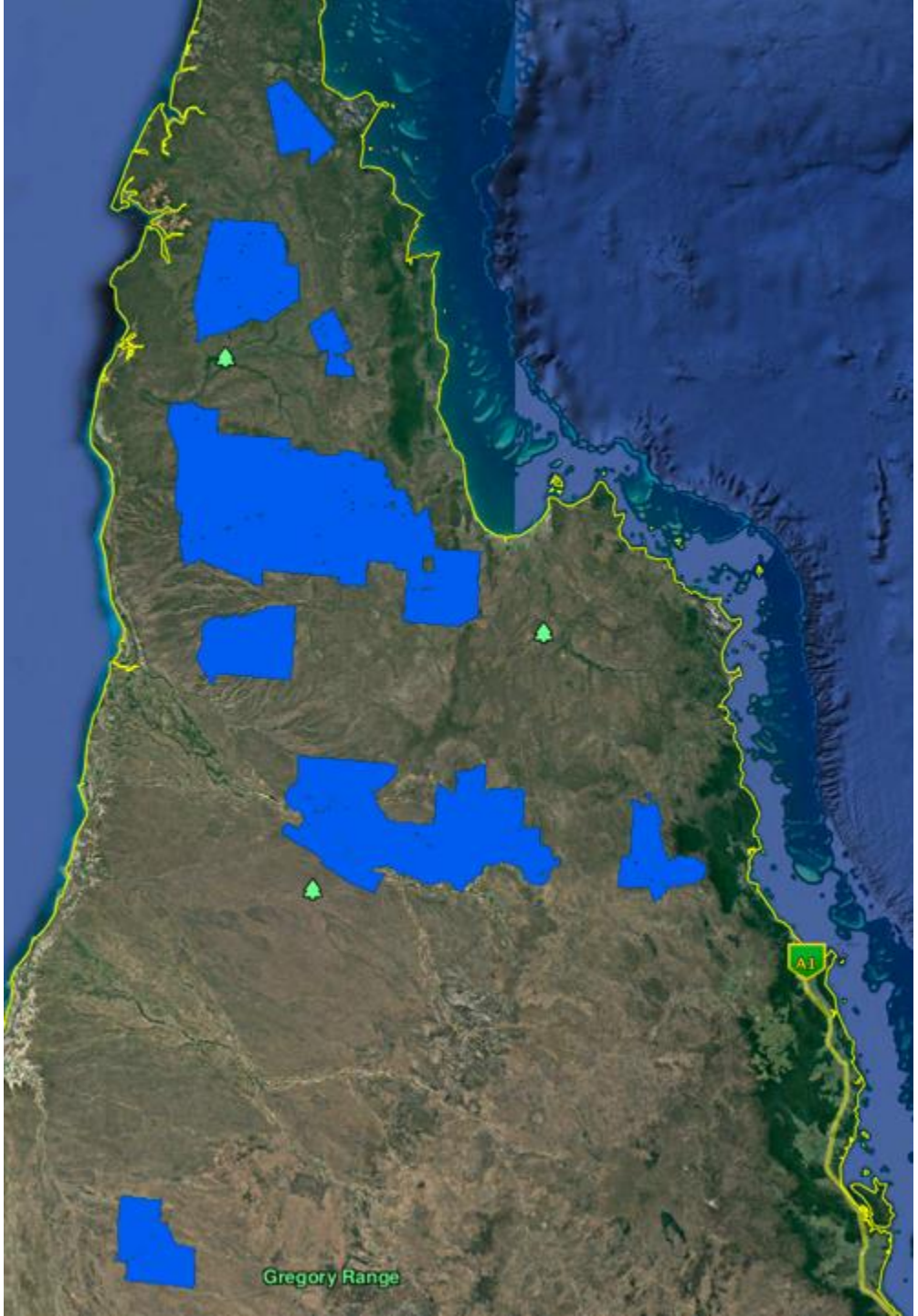
Data was sourced from NAFI InfoNet. Note that EDS & LDS data could be analysed with more depth to determine monthly patterns and also where fires are rather than just when.

CYP1 PASTORAL:

36,508 km2
36.9% of Study Area

Comprises pastoral leases where cattle grazing is the dominant land use but *also* currently run a registered ERF savanna burning project.

Note: Excludes indigenous-run pastoral areas.

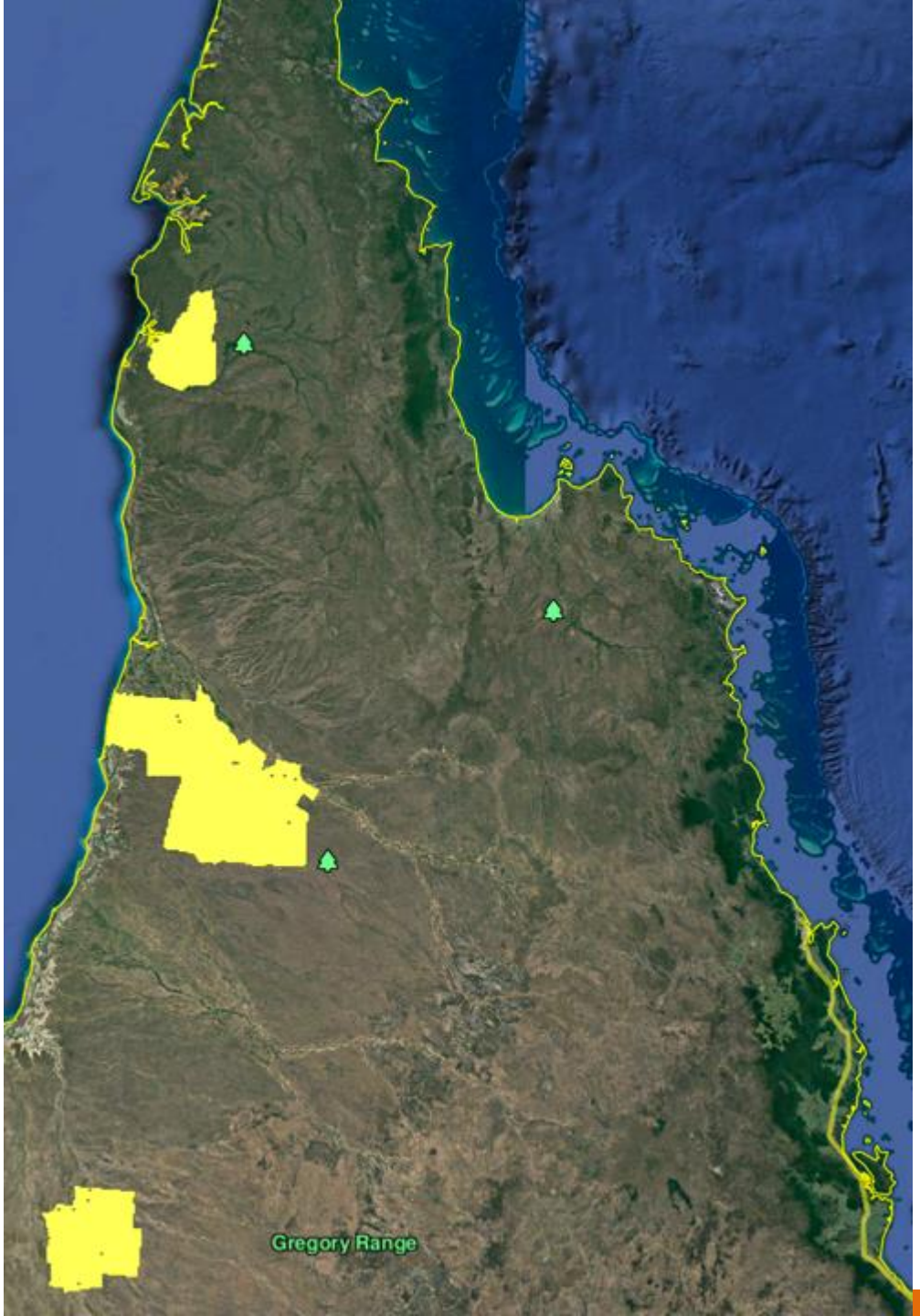


CYP2 NOT STARTED:

15,248 km2
15.4% of Study Area

A couple of ERF projects that are registered or very close to being registered, but have no active EDS fire management regime.

Note: Included in study due to recent LDS fire activity, projects close to starting.

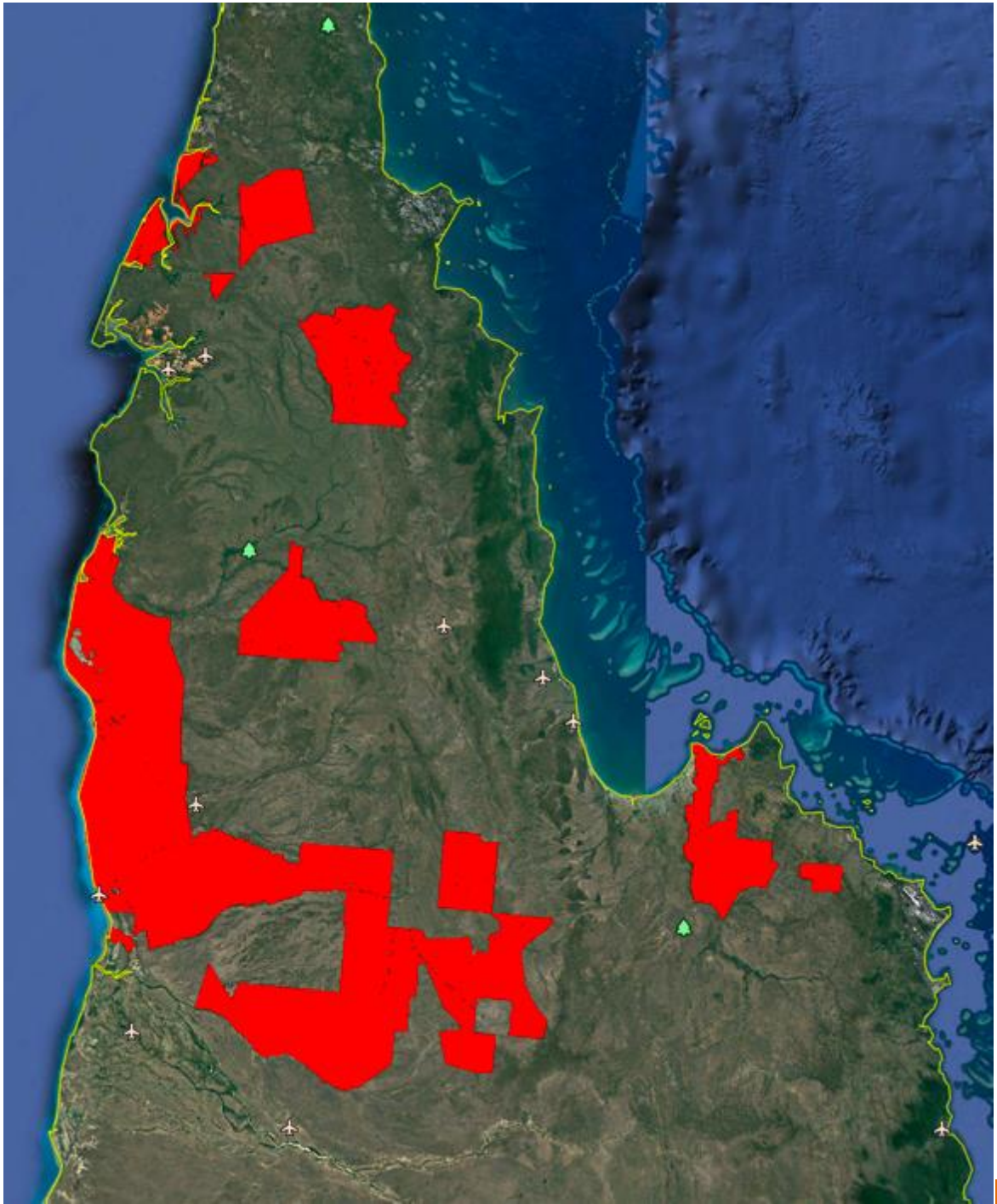


CYP3 INDIGENOUS:

25,378 km2
25.6% of Study Area

Comprises registered & currently operating ERF savanna burning projects run/managed *solely* by Indigenous groups, noting multiple entities are often involved in decision-making processes, such as RNTBCs, Aboriginal Corporations & Councils.

Note: Excludes CYPAL Joint Management Areas.

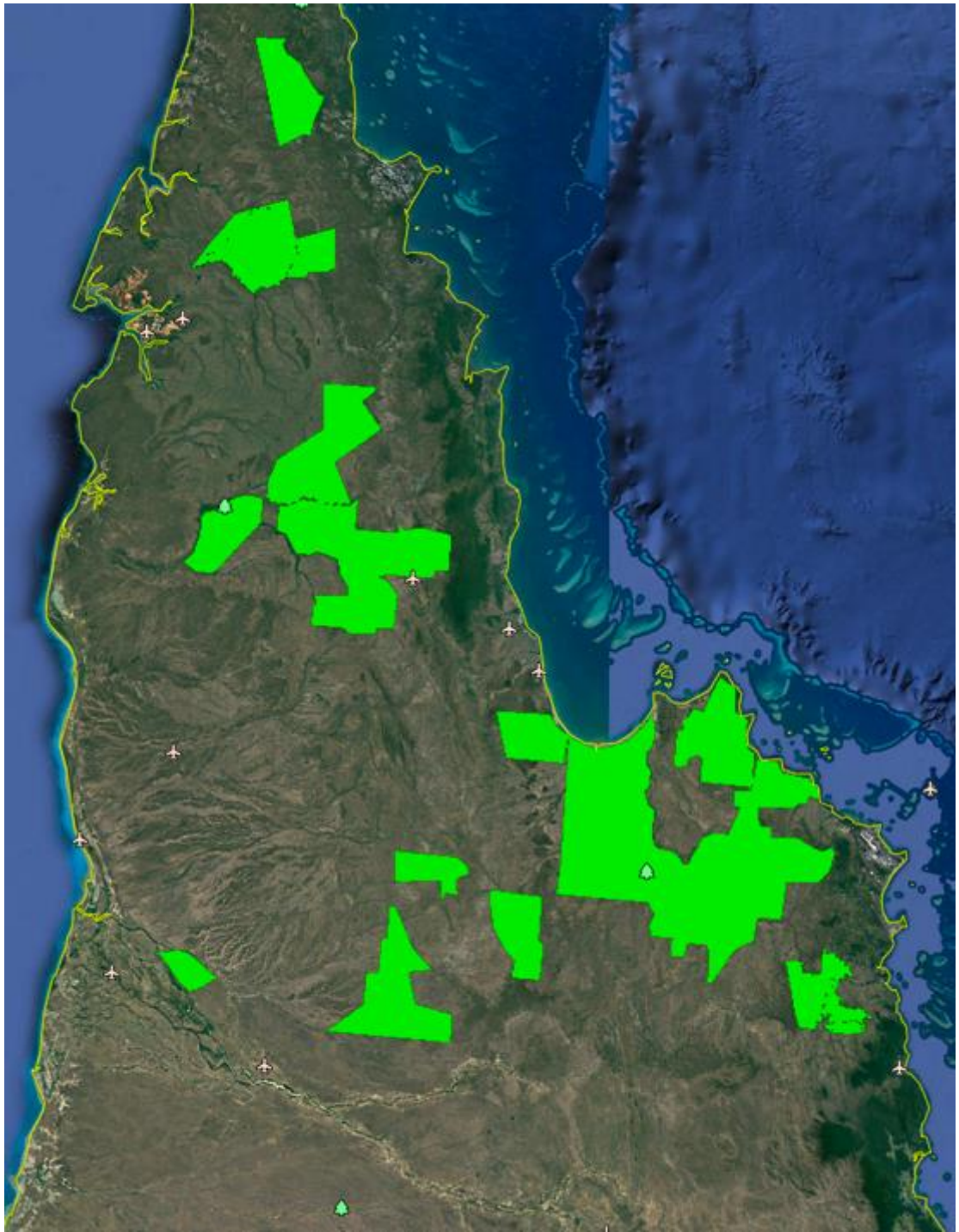


CYP4 CONSERVATION:

21,945 km2
22.1% of Study Area

Comprises areas managed primarily for conservation, with some level of current active fire management, *may or may not be ERF* projects, includes National Parks, private conservation reserve, some CYPAL JM Areas.

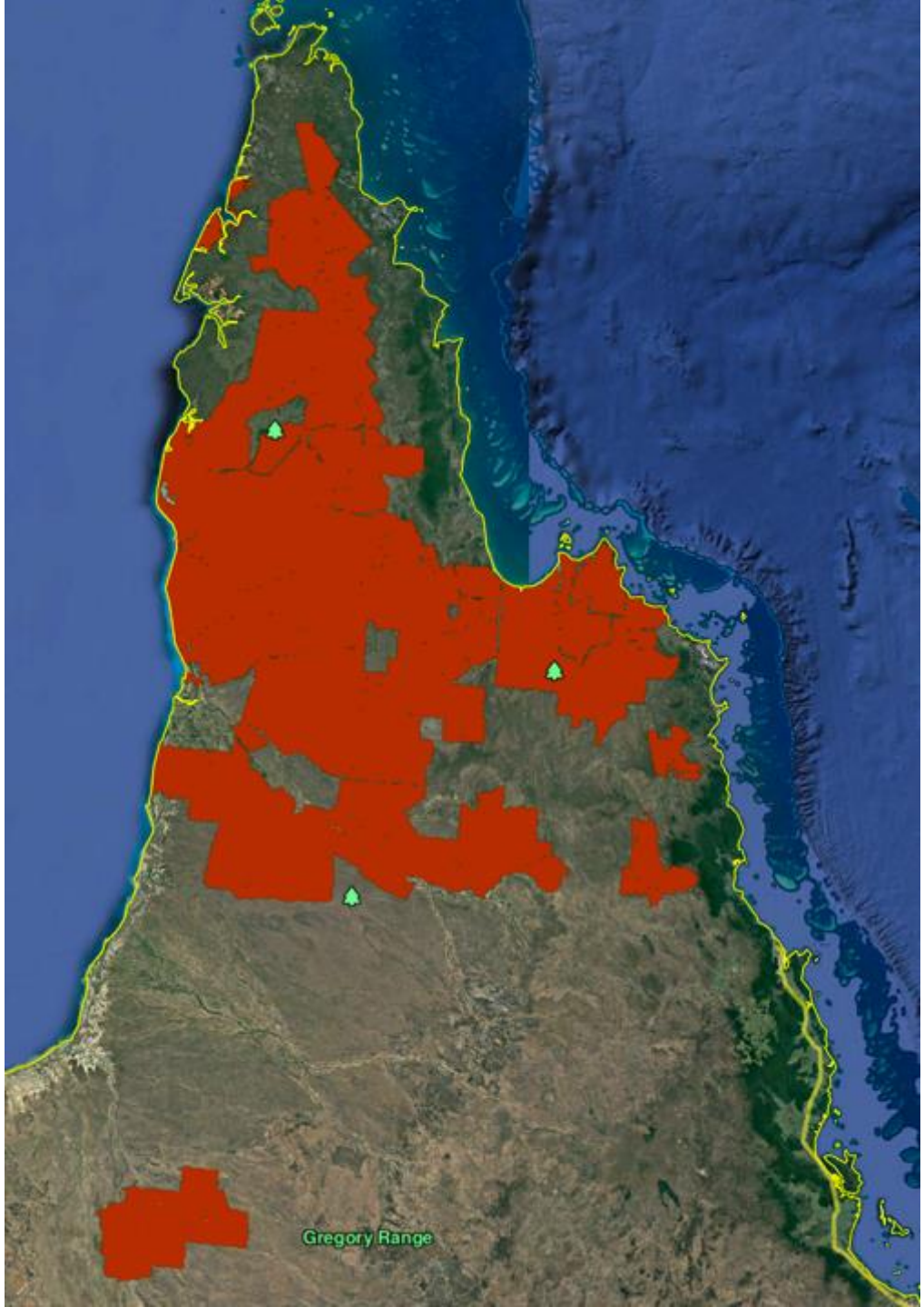
Note: This map layer takes precedence over



CYP5 AGGREGATE:

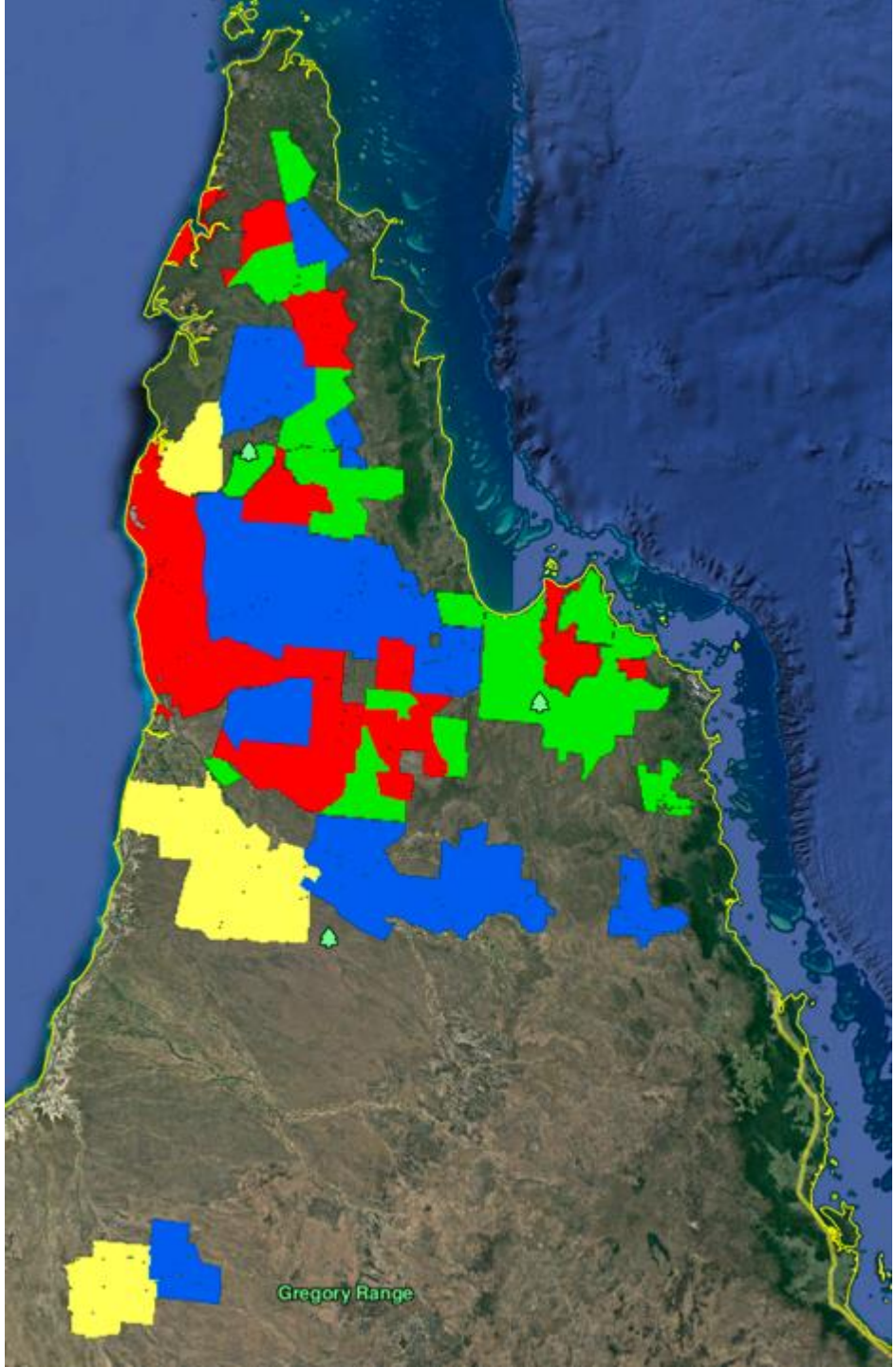
99,077 km2 in aggregate

2,752 km2 average project size

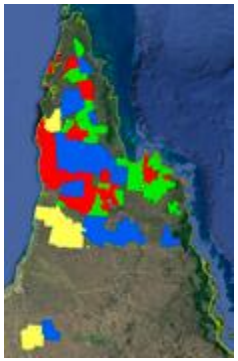


FULL STUDY AREA BREAKDOWN:

Used to aggregate EDS & LDS figures from NAFI InfoNet across the four different generic land management priority areas.



NAFI Data: 2000 – 2012 (Baseline) Period

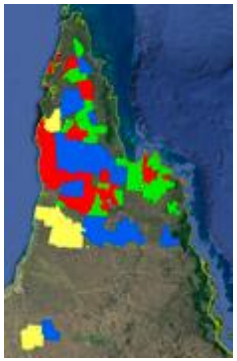


LM Category (y) vs Period (x)	2000 - 2012 Baselines				
(NAFI InfoNet Data)	*EDS %*	*LDS %*	*% Unburnt*	*EDS: Unburnt*	*EDS: (EDS + LDS)%*
CYP1 - Pastoral (non-indig)	9.0	40.3	50.7	0.18	18.3
CYP2 - Not Started (Close)	3.1	41.0	55.9	0.06	7.0
CYP3 - Indigenous Mgmt	10.5	51.5	38.0	0.28	16.9
CYP4 - Conservation Priority	11.4	32.1	56.5	0.20	26.2
CYP5 - Aggregate (All)	9.1	41.5	49.4	0.18	18.0

Baseline Notes:

EDS higher & LDS lower in Conservation (NP aerial burning started ~2007). Indigenous areas had higher LDS & lower Unburnt than other areas (noting their more westerly location tends to cure later).

NAFI Data: 2013 – 2019 ERF Project Period



2013 - 2019 Period				
EDS %	*LDS %*	*% Unburnt*	*EDS: Unburnt*	*EDS: (EDS + LDS)%*
13.1	19.7	67.2	0.19	39.9
4.2	36.1	59.7	0.07	10.4
25.3	25.1	49.6	0.51	50.2
16.6	18.1	65.3	0.25	47.8
15.8	23.2	61.0	0.26	40.5

ERF Project Notes:

Most significant increase in EDS on Indigenous projects

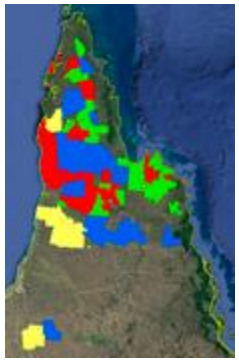
LDS % have roughly halved in all categories (excl. Not Started)

Unburnt in all categories (excl. Not Started) has gone up at least 10%

The ERF Method works!

Strong link between fire management intent and relative EDS/LDS result.

NAFI Data: 2019 Burning Season



2019 Only Burning Season				
EDS %	*LDS %*	*% Unburnt*	*EDS: Unburnt*	*EDS: (EDS + LDS)%*
14.5	14.6	70.9	0.20	49.8
5.1	38.7	56.2	0.09	11.6
31.5	15.9	52.6	0.60	66.5
18.3	15.7	66.0	0.28	53.8
18.4	18.8	62.8	0.29	49.5

2019 Notes:

EDS on Indigenous projects still rising substantially – is it now too high?

LDS on Pastoral lower than 2013-2019 average.

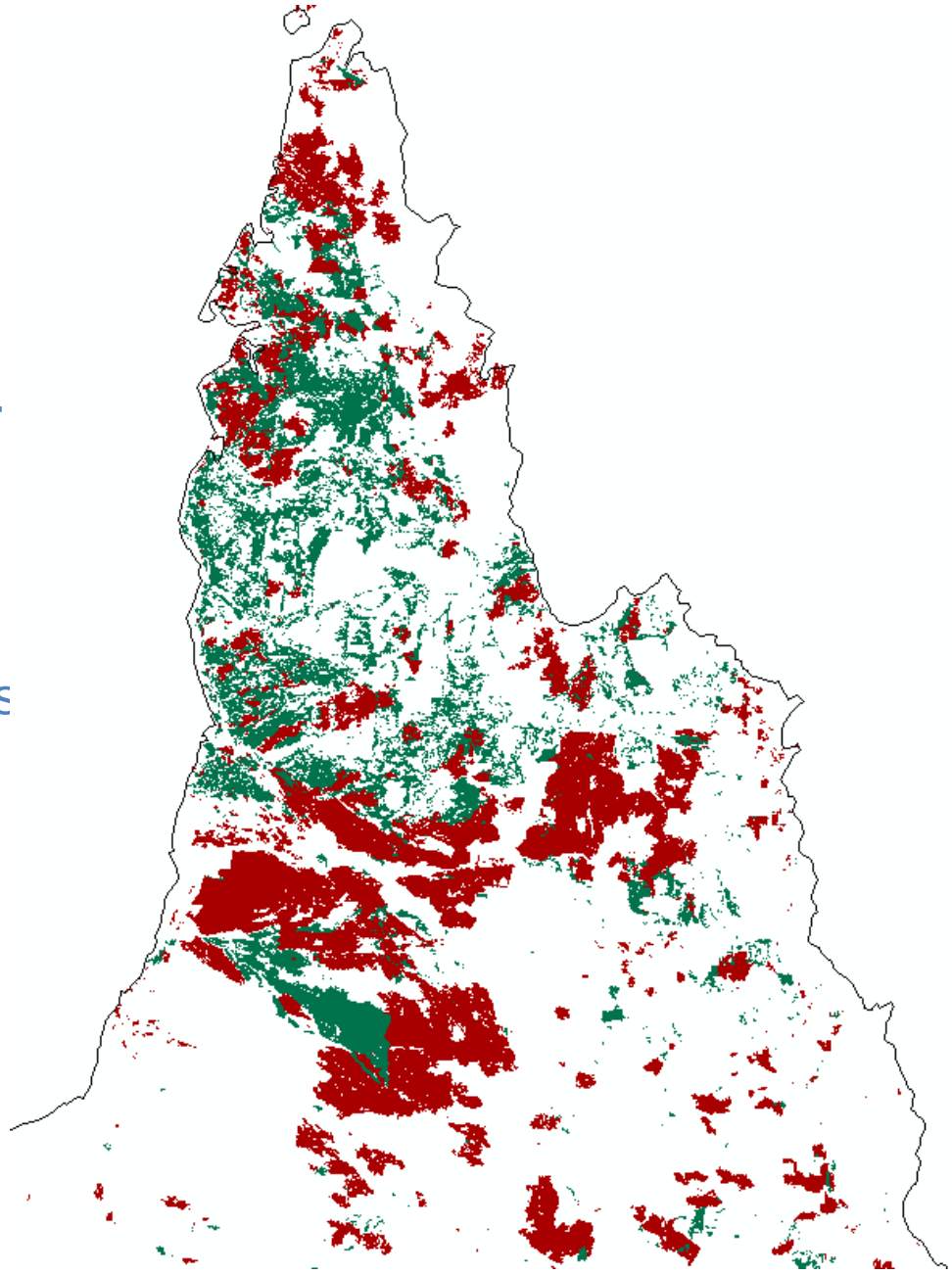
No change in EDS/LDS ratios on Not Started projects (unsurprisingly)

Challenge to CYP projects = can we be even more precise in our EDS?

2019 NAFI CYP Firescars

EDS = Green
LDS = Red

*Note the increased scar patchiness in EDS firescars compared with LDS

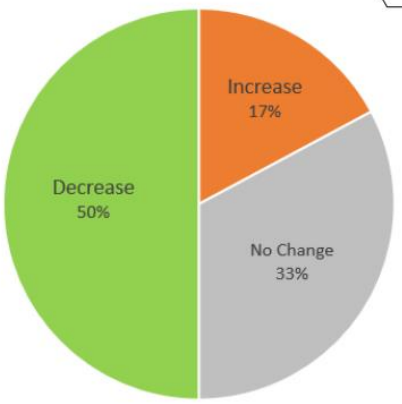


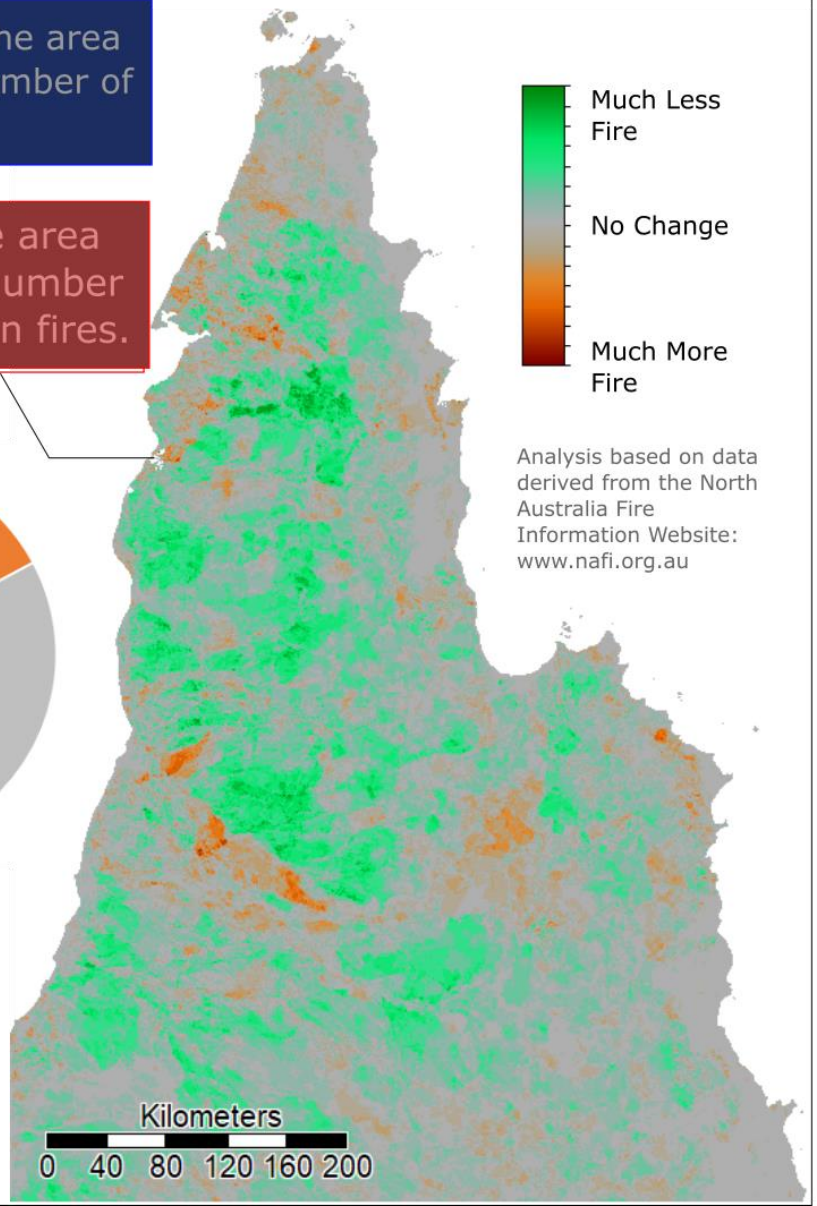
North Australia fire managment (Cape York, QLD)

A comparsion of average fire frequency between 2000-2006 and 2013-2019

43 ,300 km^2 the area with a reduced number of all fire.

40,500km^2 the area with a reduced number of late dry season fires.





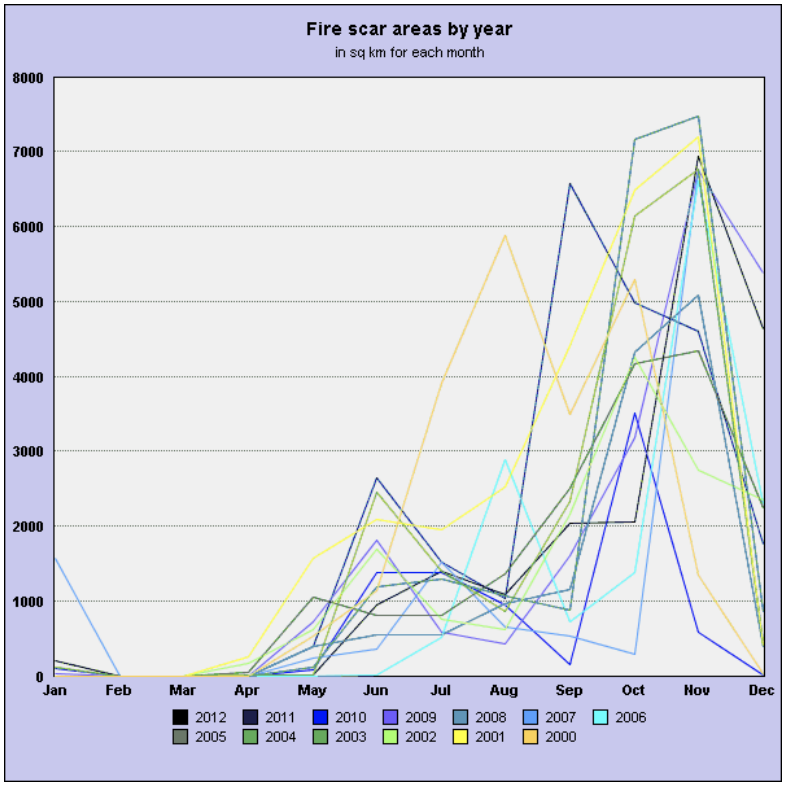
Analysis based on data derived from the North Australia Fire Information Website: www.nafi.org.au

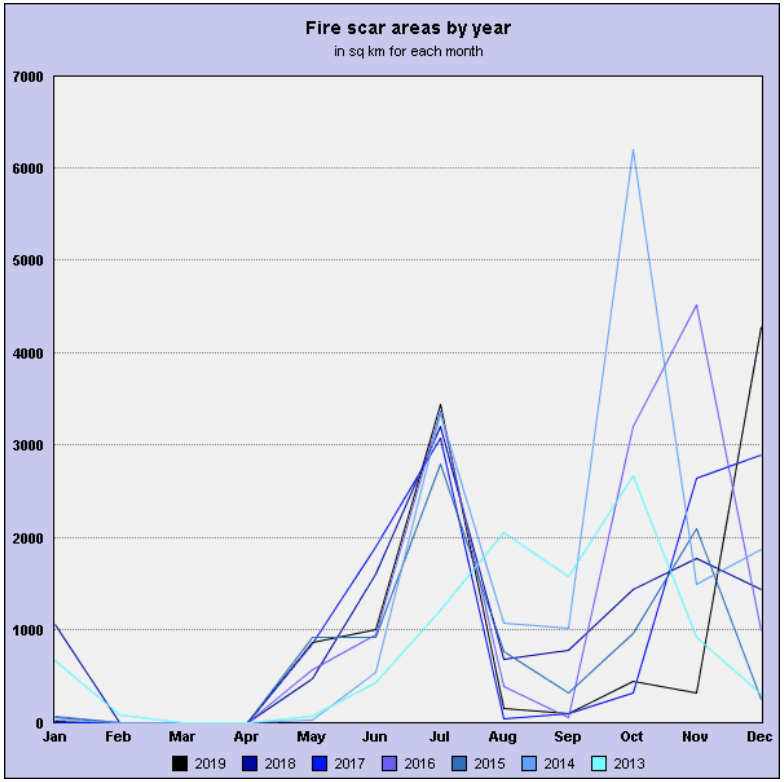
NAFI

CHARLES DARWIN UNIVERSITY

RIEL
Research Institute for the Environment and Livelihoods

NAFI Data Results: CYP1 Pastoral M Curve

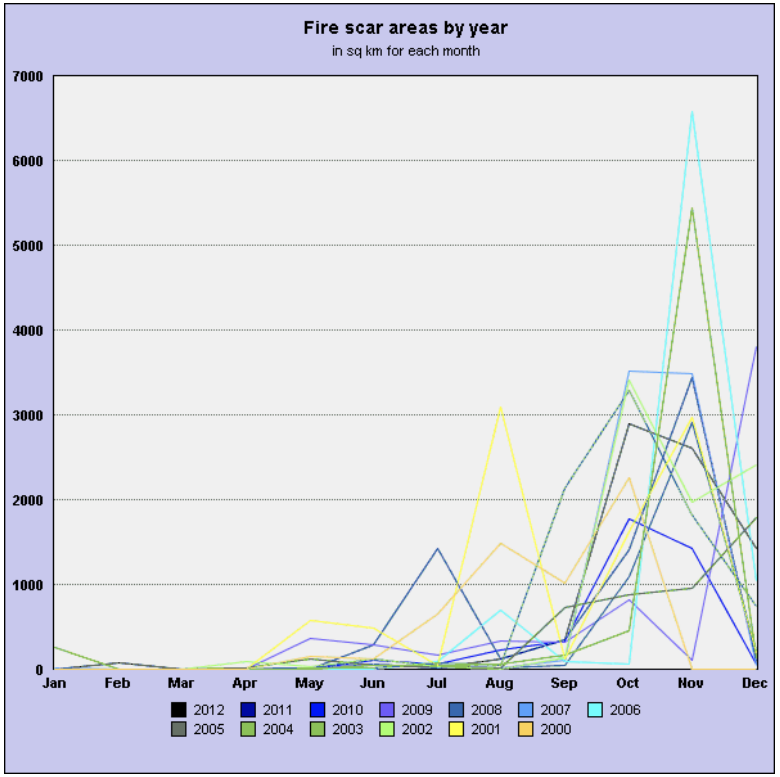


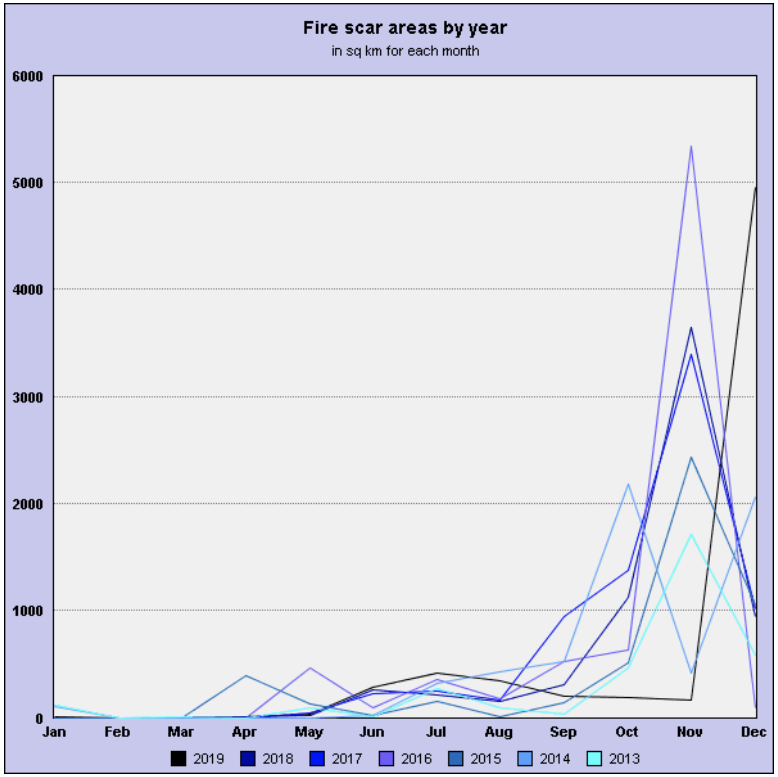


NOTE: The scales area different in the above figures

Pastoralist projects on average have successfully reduced LDS fires, often through allocating substantial resources to firefighting. Perhaps due to their high priority on keeping grass, they have the lowest EDS & LDS burn ratios (per eligible veg), whilst still lowering emissions. Their location in the central spine of CYP means they can take advantage of earlier curing times.

NAFI Data Results: CYP2 Not Started M Curve

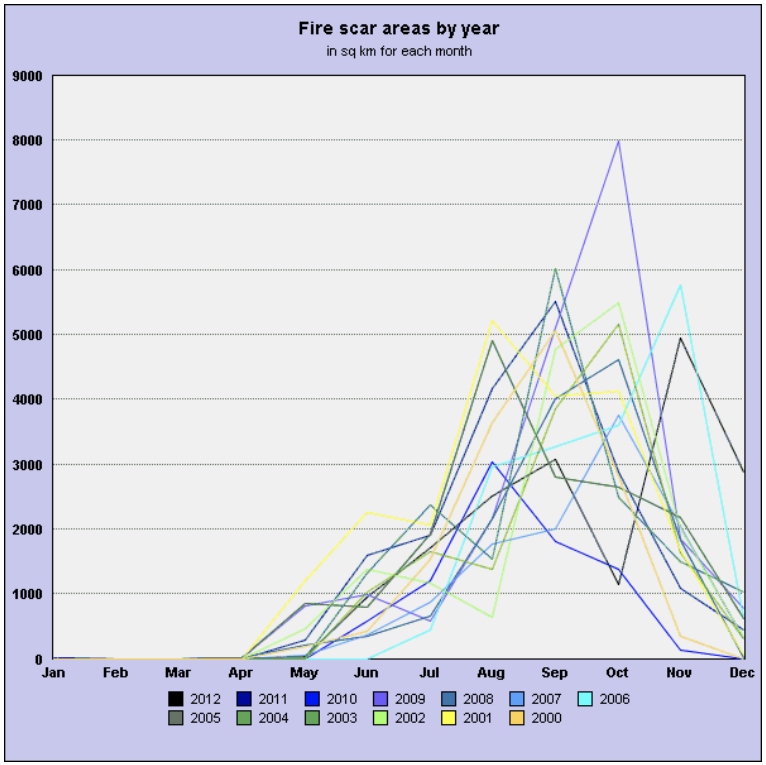


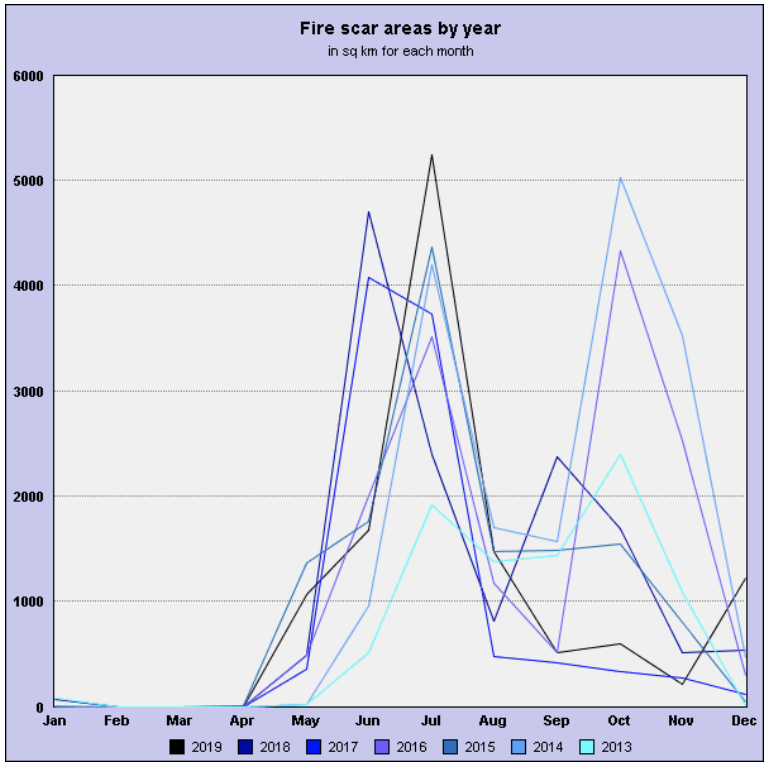


NOTE: The scales area different in the above figures

Projects yet to start have had no material impact on either EDS or LDS ratios. They are a good reminder of the (relatively) poor fire management outcomes that existed prior to the start of the CYP carbon abatement industry. They also prove that the ACCU price signal works very effectively as a mechanism to support better fire management.

NAFI Data Results: CYP3 Indigenous M Curve

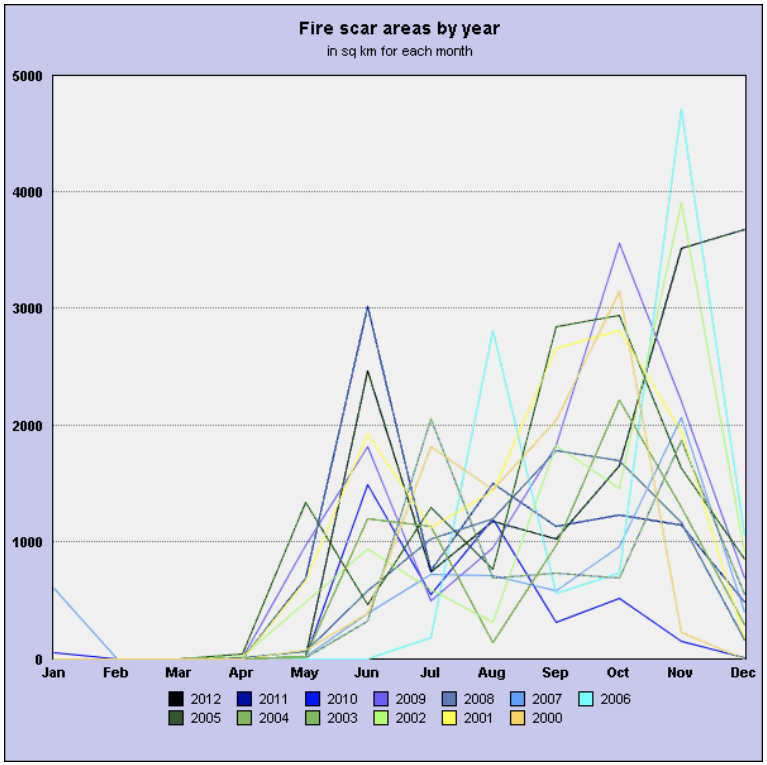


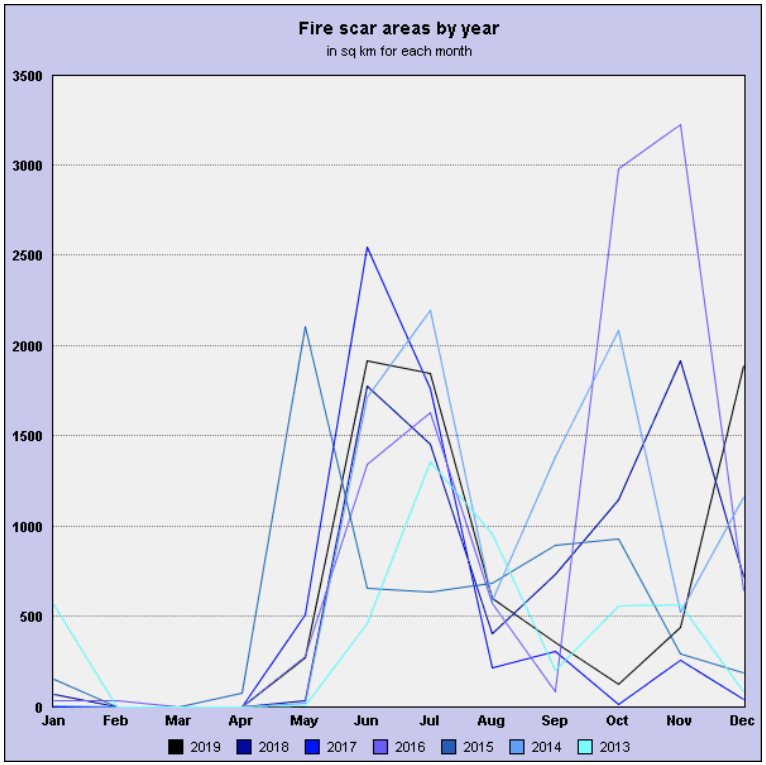


NOTE: The scales area different in the above figures

Since ERF commencement, Indigenous projects have successfully lowered emissions. However, they have higher EDS & LDS ratios & lower unburnt ratios than all other land management categories (apart from Not Started). In recent years, some areas have approached 50% EDS – is this too high?

NAFI Data Results: CYP4 Conservation M Curve

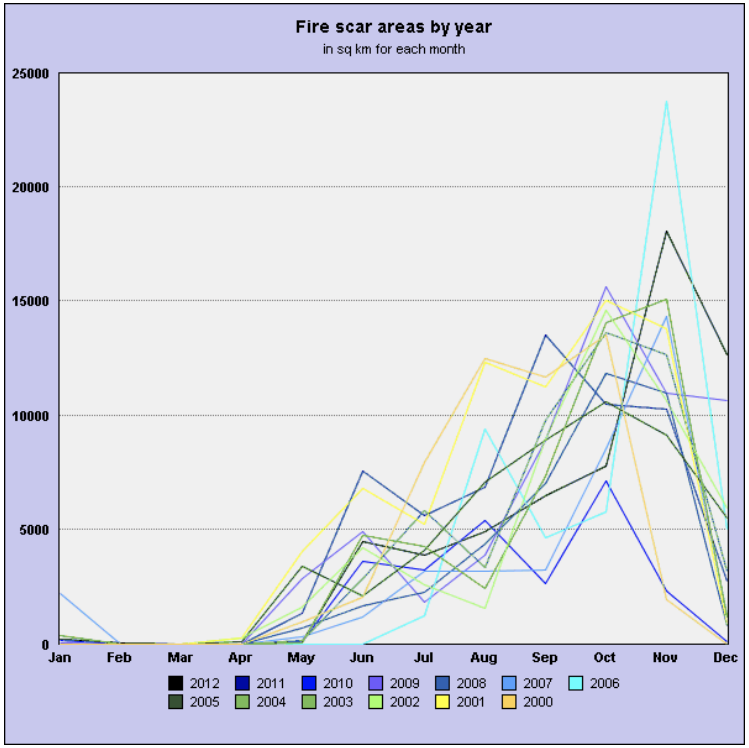


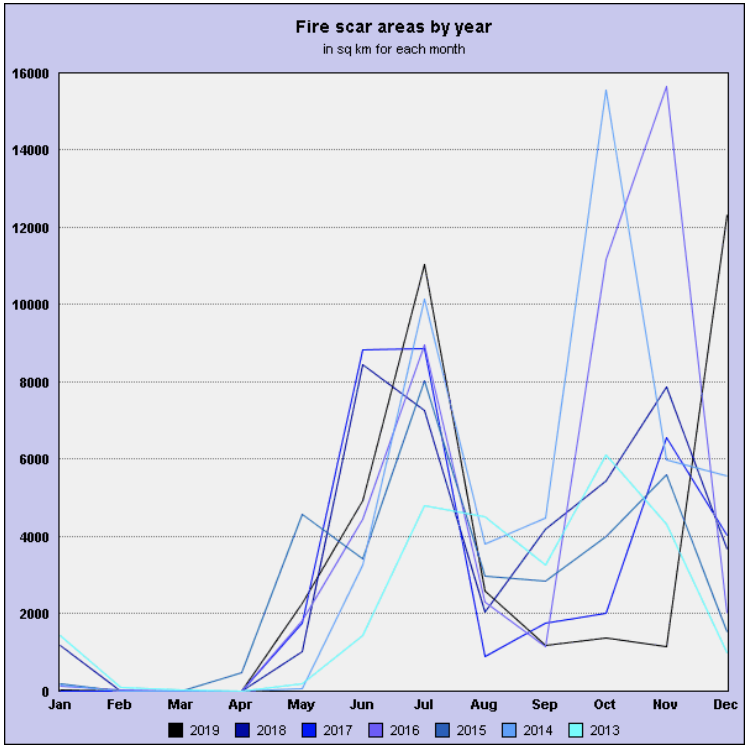


NOTE: The scales area different in the above figures

On average, areas managed primarily for conservation have been undertaking proactive fire management for longer than the other categories, with some areas starting aerial incendiary programs from 2006 - 2010. Still having problems with LDS fires….

NAFI Data Results: CYP5 Aggregate M Curve





NOTE: The scales area different in the above figures

The aggregated data proves that CYP projects have strongly shifted the EDS & LDS fire ratios over a relatively short period of time. There is now very little fire in Aug & Sept on CYP. Now the challenges are to reduce fires more in the Late Dry Season and to become more precise at undertaking strategic cool burning.

Final Questions for Consideration

As an industry, are we taking time to listen to contrarian views?

Have we become complacent in continuing to strive for higher standards of precision?

Are we now burning too much in the Early Dry Season?

Why does everyone run their boundary every year, when we are supposed to be tackling fire at a landscape scale?

What is stopping us working together more?

Can we we come together across northern Australia to ensure a baseline of training standards is developed?

Do we need to cooperate to strategically implement a biodiversity monitoring program to underpin our claims of the benefits of cool burning?

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