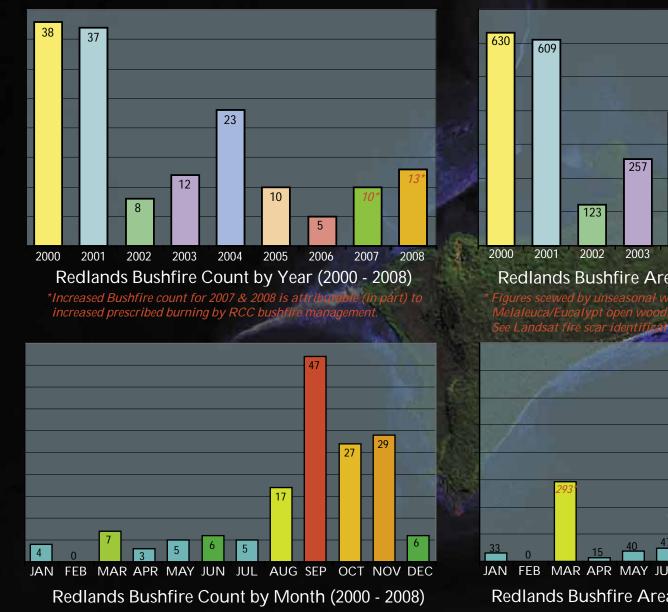
Redlands Bushfire History (2000 - 2008) Mainland and Southern Moreton Bay Islands

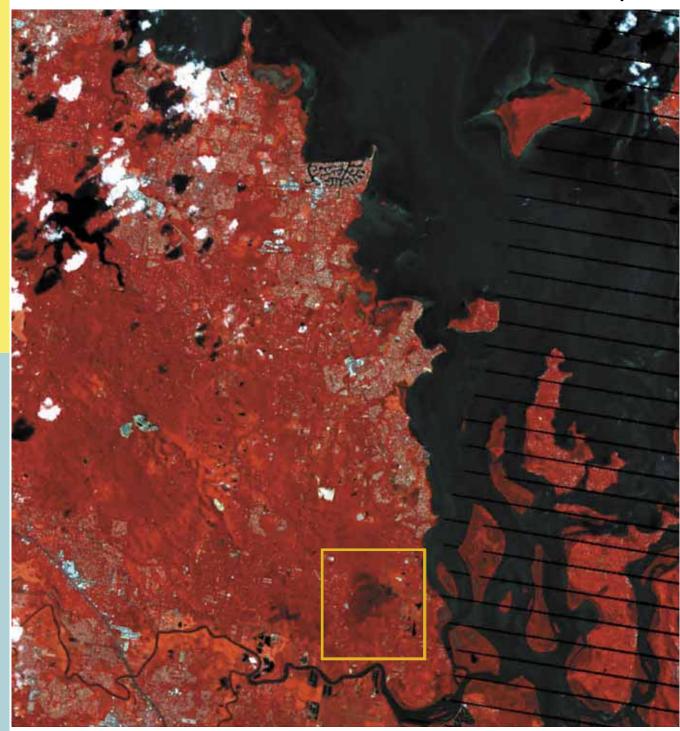


kilometres

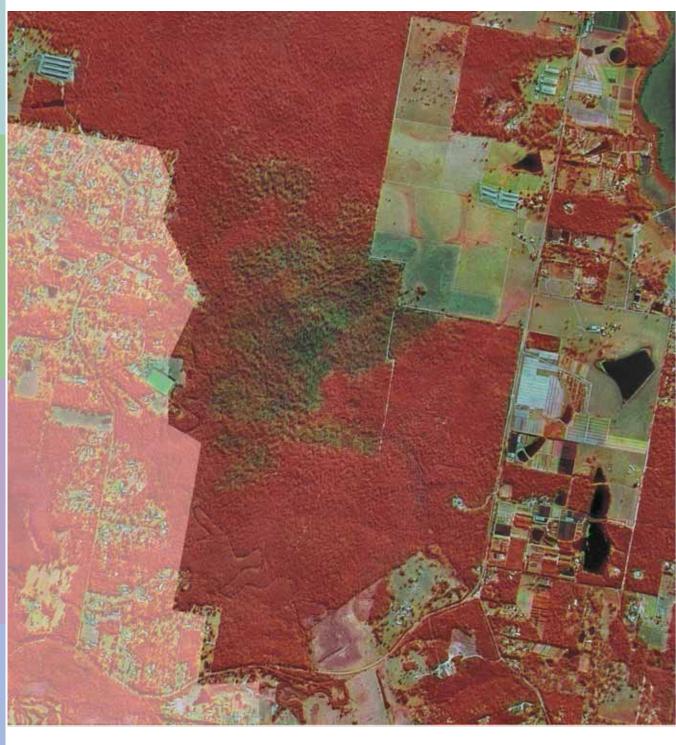
Landsat Identified Fire Scars	Fire ID 1 2 3	Landsat Capture Date 20000602 20000922 20000922	QFRS Incident Date	Area (ha) Approximate 26.0914 11.2475 134.76	Comment
Note: Fire Scar polygons are shown with more recent events overlapping previous events. For frequency data see .shp files provided to RCC GIS Coordinator Ian Read.	4 5 6 7 8	20000922 20000602 20000602 20000602 20000602		12.895 11.0308 4.5551 3.0731 1.48193	
	9 10 11 12 13	20000922 20000922 20000922 20000922 20000922 20000922		35.8441 47.25 6.23587 27.8434 10.1692 22.5048	
23 395 2002 257 295	14 15 16 17 18	20000922 20000922 20000922 20000922 20000922		22.5948 32.2277 20.9185 5.80108 0.645969	
8 12 10 10 10 10 10 10 10 10 10 10 10 10 10	19 20 21 22 23	20000922 20000922 20000922 20000922 20000922		8.54405 9.43321 13.0578 5.70111 4.97258	
2002 2003 2004 2005 2006 2007 2008 Bushfire Count by Year (2000 - 2008) hfire count for 2007 & 2008 is attribute (in part) to cribed burning by RCC bushfire management. 2000 2001 2002 2003 2004 2005 2006 2007 2008 Redlands Bushfire Area(ha) by Year (2000 - 2008) Figures scewed by unseasonal wildfire 23 -25 March. 2005 (Fire ID 119), in Melaleuca/Eucalypt open woodlands. Servent me Creek, Redland Bay.	24 25 26 27 28	20000922 20000922 20000922 20000922 20000922		4.1374 2.6862 2.40365 6.34649 15.8258	
See Landsat fire scar identification worked example. 47 698 698	29 30 31 32 33 24	20000821 20000821 20000922 20000922 20000922 20000922		3.11726 1.86295 1.62869 3.42496 0.861577 2.22344	
	35 36 37 38 39	20000722 20000821 20001211 20001211 20001211 20001211 20011027	20010823	7.93312 88.9783 29.2465 2.49147 1.60364	LARGE AREA OF BUSH BURNT
	40 41 42 43	20011027 20011112 20011027 20011027	20010023 20011013 20010819 20010821 20010818	5.56533 2.22334 0.972384 5.49221	LARGE BUSH FIRE. SMALL BUSH FIRE EXT 1 HOSE REEL. AREA OF BUSH LEFT BURNING SAFE INSIDE PERIMETER. NIGHT SHIFT RELEIVED DAY SHIFT BY TAXI. LARGE AREA OF BUSHLAND BACK BURNT, REDLAND SHIRE COUNCIL ASSISTED.
3       5       6       5       33       0       15       40       47       35       35       0       2008         APR MAY JUN JUL AUG SEP OCT NOV DEC       JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC       JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC       2008       2008         Bushfire Count by Month (2000 - 2008)       Redlands Bushfire Area(ha) by Month (2000 - 2008)       2008       2008	44 45 46 47	20011112 20011112 20011112 20011112	20011101 20011020 20011020 20011029	4.03787 2.52804 0.842126 3.35661	BUSHFIRE IN RSC RESERVE. AREA LEFT BURNING WITH RSC FIRE SUPPRESSION UNITS WITH MR. JONES IN CHARGE. AREA OF BUSH ON FIRE - EXT USING BEATERS AREA OF BUSH ON FIRE EXT-BEATERS . SMALL AREA BUSH LEFT BURNING SAFE AFTER SECURING PERIMETER WITH
QFRS Records (Cleveland & Capalaba)	48 49 50	20011112 20011112 20011112	20011101 20011103 20010915	14.6201 1.98764 37.0021	BLOWER, RAKES AND BEATERS RE IGNITION OF BUSHFIRE FROM PREVIOUS DAY.EXT CASE1 BUSH FIRE REIGNITION FROM PREVIOUS BUSH FIRE. B5 TYPE = NO DETECTORS INSTALLED - NOT APPLICABLE: AREA OF GRASS AND BUSH ON FIRE, FIRE AUTHORITY EXTINGUISHED/BACK-
Note: QFRS incident records rflect vegetation fire only. Many records indicte fire events affecting less than one hectare, which can't be effectively mapped using archival Landsat	51 52	20011112	20011031	5.98998 0.858909	-BURN. CAUSE OF FIRE UNKNOWN. BUSHFIRE IN THE KOALA BELT STARTED BY A FUSIBLE LINK DROPPING FROM A HIGH VOLTAGE POWER LINE.
2001	53 54 55 56 57	20011112 20011112 20011027 20011112 20011112	20011012 20011031 20011002	49.5236 0.886946 16.8213 21.563 17.478	2 SMALL BUSH FIRES EXT C1 HP. SMALL AREA BUSH LEFT BURNING SAFE BUSH FIRE .EXT USING BLOWERFAN AND RAKES
2003	58 59 60 61 62	20011112 20010808 20011112 20011112 20011112		1.49107 6.43437 6.48511 9.23396 4.48555	
	63 64 65 66	20011027 20011112 20011112 20011027	20010928 20010917	2.19785 280.079 15.2831 9.85674	LARGE AREA OF BUSHLAND BROUGHT UNDER CONTROL BY BACKBURNING BUSH FIRE PRIOR TO OUR ARRIVAL, SUSPICIOUS, DAMAGE TO TRENCHER , DAMAGE \$300, DAMAGE TO SLEEPERS , \$400. SELF EXTINGUISHED, POLICE INVESTIGATING.
<ul> <li>2005</li> <li>2006</li> </ul>	67 68 69	20011027 20011027 20011112	20010910 20011016 20011102	1.01517 3.50413 4.54084	SMALL BUSH FIRE EXT 1 HOSE REEL. WILDFIRE THREATENING STRUCTURES. BUSH HAD A VERY HIGH FUEL LOAD AND INCREASING WINDS. B5 TYPE = NO DETECTORS INSTALLED - NOT APPLICABLE: COUNCIL RESERVE DIFFICULT ACCESS, BCC BUSHFIRE MANAGEMENT LEFT IN
2007	70 71 72 73	20011027 20011027 20011027 20011112 20011112	20011012 20010915 20011102	7.98838 4.47654 4.14161 33.2023	CHARGE. AREA OF BUSH ON FIRE BACK BURNT TO EXTINGUISH FIRE SMALL GRASS/BUSH FIRE EXTINGUISHED BY HOSE REEL AND BEATERS. EXTENSION OF PREVIOUS FIRE, RSC BUSHFIRE MANAGEMENT LEFT IN CHARGE
2008	74 75 76	20011027 20011112 20021014	20020928	4.78481 16.3156 7.88636	BUSHFIRE BURNING SAFE WITHIN THE BOUDARIES OF THE FIREBREAKS ON 3 SIDES WITH A CREEK BOUNDING THE 4TH SIDE. FIRE BURNING IN HOSTILE TERRAIN, CIRCUMNAVIGATED FIRE AND CHECKED FIRE'S LOCATION AND
	77 78	20021014 20021217	20020924 20021127	1.36223 9.41567	SPREAD, FIRE BURNING SLOWLY TOWARDS CREEK AGAINST THE DIRECTION OF WIND. SMALL AREA LEFT BURNING SAFE, RSC BUSHFIRE MANAGEMENT MONITORING ASSISTED RSC WITH BACK BURN TO CONTROL AREA OF BUSHLAND ALREADY ALIGHT. MADE A FIRE CALL OF INCIDENT AFTER ARRIVAL
	79 80	20021014 20021014	20020906 20020813	21.1172 60.3364	BUSHFIRE CONTROLLED BY BACKBURNING QFRS, LATE MODEL LANDROVER DISCOVERY LOCATED AT CENTRE OF FIRE, REPORTED TO QPS LARGE BUSHFIRE REIGNITED, BURNING ON 2 FRONTS, BACKBURNED FROM AVALON ROAD THROUGH TO JOHNATHON ROAD, SHELDON. 2 REDLANDS FIRE SUPPRESSION UNITS USED TO MAINTAIN FIREBREAK DUE TO INABILITY OF QFRS
	81 82 83 84	20020827 20020827 20020827 20020827 20030323		13.3708 6.66749 2.78371 16.6793	APPLIANCES TO ACCESS LOCATION.
	85 86 87 88 89	20031126 20031126 20031126 20031126 20031126 20030307	20031103 20031113 20030119	49.9213 3.32908 178.431 0.375231 5.23482	LARGE AREA OF BUSH PERIMETER MADE SAFE AREA OF BUSH INVOLVED IN FIRE. EXTINGUISHED CASE 1. AND BEATERS. AREA OF BUSH ON FIRE BACK BURNT AND BEATERS TO EXTINGUISH FIRE
	90 91 92	20040105 20040105 20031228	20031229 20031229 20031128	0.475833 0.423952 0.899338	GRASS/BUSH FIRE FROM PREVIOUS INCIDENT - EXTINGUISHED CASE 1 AND RAKES. BUSHFIRE IN CROWN LAND OFF COBURG WEST ST, CLEVELAND. FIREBREAKS CREATED AND WITH BEATERS, RAKES AND KNAPSACKS EXTINGUISHED BLAZE.
	93 94	20030923	20030920	1.16663 0.172711	REDLANDS SHIRE COUNCIL FIRE SUPPRESSION VEHICLE AND CREW WERE USED TO ASSIST TO EXTINGUISH THE BLAZE. WHEN AREA DEEMED SAFE. CODE 3 , BACKBURN, ASSISTED BY TWO R.S.C.BUSHFIRE UNITS. B5 TYPE = TYPE OF DETECTOR UNDETERMINED: SMALL AREA OF BUSH ON FIRE
	95 96 97	20031102 20040129 20040129	20031101 20040108 20040112	0.25161 16.2896 9.67143	SMALL BUSH FIRE EXT 1 HOSE REEL. LARGE AREA OF BUSHLAND ON FIREEXT CASE 1 4 BCC SUPRESSION VEHICLES IN ATTENDANCE SMALL BUSH AND GRASS FIRE EXTINGUISHED WITH THE ASSISTANCE OF REDLANDS FIRE SUPRESSION UNITS
	98 99 100 101	20040129 20040504 20041011 20041011	20040101 20040422 20040928	1.73506 2.37761 13.6946 7.21439	BUSH FIRE, EXTINGUISHED 1 HOSE REEL. CAUSE SUSPICIOUS, 10 YEAR OLD IN AREA, REPORTED NAME TO QPS PER TELEPHONE DUE TO A NUMBER OF SIMILAR FIRES IN LOCAL AREA. BUSH FIRE BACKBURN, BEATERS, RAKES, LEFT IN HANDS OF S.R.C. UNIT BUSHFIRE IN VACANT ALLOTMENT SPREAD TO PROPERTIES BORDERING
	101	20041011	20040928	5.93195	BOUNDARY RD, THORNLANDS. FIREBREAKS ESTABLISHED WITH BACKBURNING AND ULITISED RETICULATED SUPPLIES TO CONTAIN FIRE. CAUSE UNKNOWN BUT QPS CALLED DUE TO SUPICIOUS NATURE OF FIRE AND LOCATION. AREA OF BUSH DAMAGED BY FIRE SOURCE OF IGNITION WAS AN ABANDONED VEHICLE NO IDENTIFICATION
	103 104	20040613 20041011	20041008	1.22037 221.634	ASSISTED SOUTH EAST REGION AT MAJOR GRASS/BUSH FIRE IN CARBROOK AREA BORDERED BY STERN RD, REDLAND BAY CLEVELAND RD, TEVIOTT RD & GERMAN CHURCH RD - WORKED UNDER CONTROL OF CR35 & A/D BRAD COMMENS - APPLIANCES ON SITE INCLUDED 935, CR35, 938, 930, BEAUD
	105 106 107 108	20041011 20041011 20041011 20041011	20040915	4.16963 14.8128 41.3941 6.28343	LARGE BUSH FIRE IN BEENLEIGH S AREA, 935 CHANGING CREW, BURNING SAFELY.935 TO RETURN.
	109 110 111 112	20041011 20041011 20041011 20041011 20041011	20040926	10.1442 5.59322 5.11028 8.35816	BUSHFIRE IN RESERVE OFF LINCOLN CLOSE, ALEXANDRA HILLS. CONTAINED 3 SIDES BY BACKBURNING UNABLE TO CONTAIN 1 SIDE DUE TO TERRAIN AND
	113 114	20041011	20041011	2.12219 10.0708	EQUIPMENT FAILURE (KNAPSACKS). 2 REDLANDS FIRE SUPPRESSION UNITS USED TO ACCESS DIFFICULT TERRIAN WITH HOSE REELS. 2 FIRES IN AREA OF BUSH BACK BURNT LARGE AREA AS THE CONDITIONS WERE FAVOURABLE AND THE AREA HAD BEEN BURNT PREVIOUSLY
	115 116 117	20041011 20041128 20041027	20041112 20041014	3.08652 1.29406 2.57029	BUSH FIRE, ABANDONED CAR LOCATED. 187 HOB, COMMODRE 1984. 2 SEPERATE BUSH FIRES STARTED IN DENSE SCRUB AT THE REAR OF SHELDON COLLEGE AND QUICKLY SPREAD TO NEIGHBOURING PROPERTIES. SHIFT AND TASK FORCE CREWS CREATED FIREBREAKS, BACKBURN AND CONTAINED BOTH FIRES. CAUSE UNKNOWN. UNABLE TO DEFINE PROPERTY BORDERS.
	118 119	20041027 20050328	20050323	1.36363 221.438	RESPONDED TO ASSISTED REGION 6 SOUTH EAST AT AMULTI PUMP AND MULTIPLE RURAL UNIT GRASS/BUSH FIRE THREATENING A LARGE CHICKEN FARM. PUMP 930 BECAME CONTROL POINT FOR SECTOR 2 COMMAND INVOLVING MULTIPLE RURAL UNITS INVOLVED IN FIREFIGHTING GRASS
	120 121 122 123	20050912 20050912 20050912 20050912 20051209	20050824 20051009	25.4197 10.3234 3.53556 1.10868	PADDOCKS. BURNOFF BY LOGAN SHIRE COUNCIL IN VENMAN BUSH RESERVE AREA OF GRASS AND BUSH ON FIRE, BETWEEN CRICKET FIELD AND RUBBISH
	124 125	20050515 20050328	20050426 20050306	0.806437 1.35185	DUMP – CAUSE OF FIRE UNKNOWN. SMALL GRASS/ BUSH FIRE EXTINGUISHED 1 HOSE REEL. SEVERAL SMALL AREAS OF BUSH ON FIRE NEXT TO WALKING TRACK OFF WINDEMERE ROAD, EXTINGUISHED CASE 1 HOSEREELS, NO PERSON IN AREA.
	126 127 128 129 130	20050328 20050413 20051209 20061118 20061118	20050327	1.80495 1.57233 5.154 8.22275 3.98761	MEDIUM GRASS/ BUSH FIRE EXTINGUISHED 1 HOSE REEL.
	131 132 133 134 135	20060510 20060907 20061110 20070310 20070801	20070711	8.74927 14.5899 3.13848 25.6218 7.32772	
	136 137 138 139 140	20070825 20070801 20070801 20070801 20070513	20070807 20070731 20070712 20070713	10.1605 7.71027 8.01492 4.6419 10.9103	
	141 142 143	20070614 20080421 20080320 20080522	20070519 20080415 20080312 20080514	3.56037 12.2104 2.62875 10.0008	PUBLIC CALLED FIRE COMMS. CLEVELAND STN RESPONDED. CALLED RSC AT 5.00PM TO ASSIST. RSC REQUEST MOP UP UNIT AT 5.10PM. NOT ABLE TO ASSIST. 18.40 PM RANG AGAIN - ASSISTANCE NOW ENGAGED.
	144 145 146 147	20080523 20080523 20080811 20080912	20080514 20080508 20080731 20080831	10.0008 6.75798 7.47971 1.41971	AREA OF BUSH DAMAGED BY FIRE REDLAND CITY COUNCIL FIRE SUPPRESSION TEAM ATTENDED.
0 2.5 5	148 149 150 151	20080912 20081022 20080928 20080828	20080909 20080927	0.682531 4.63585 0.235732 4.98138	BUSH FIRE LEFT IN HANDS OF REDLAND CITY COUNCIL FIRE SUPPRESSION SMALL AREA BUSH ALIGHT ON REDLANDS COUNCIL PROPERTY. EXTINGUISHED CASE 1, 15 MINS.
	152 153 154 155 156	20071006 20081116 20081201 20081022 20081006	20071001 20081123 20071127 20081021 20080929	1.37605 1.2571 1.91777 3.64981 1.15464	SMALL AREA OF GRASS AND BUSH ON FIRE IN GLIDER CONSERVATION AREA.
kilometres					RCC FIRE SUPPRESSION TEAM CALLED AND ATTENDED



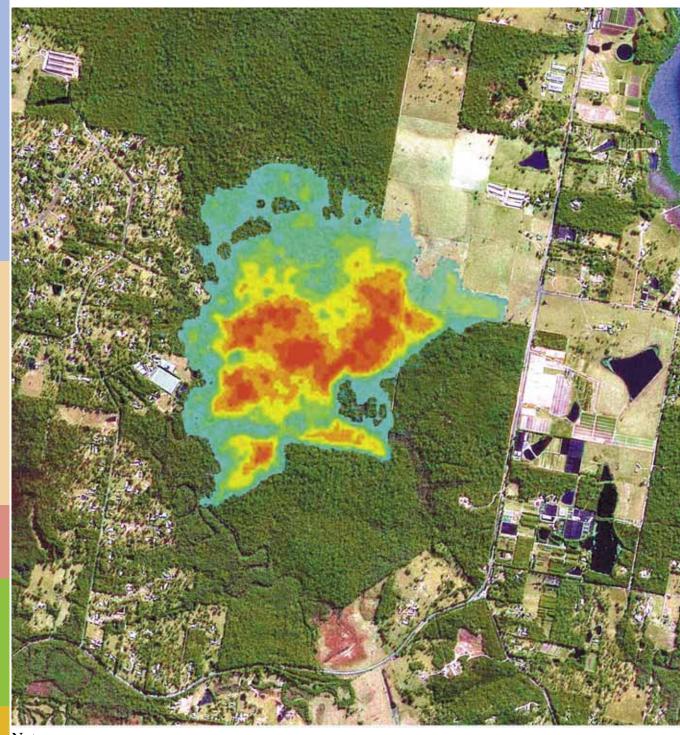
Landsat fire scar identification worked example



Analysts examined 112 capture dates (path 89/row 79) Lansat 4-7 TM & ETM images sourced from the USGS/EROS Landsat archive, using QFRS incident records, Rural First Officer reports and Sentinel hotspot data to provide the "when and where" guidelines. This examination yielded 157 identifiable fire scars from the study area (Redlands LGA) for the period January 2000 to December 2008. The above image is derived from Lansat Scene ID LE70890792005087ASN00, which is a Lansat 7 ETM+ (SLC Off) scene captured on the 28th of March 2005. The fire scar contained within this data (shown with bounding polygon), coresponds to a large bushfire event recorded by QFRS as well as Rocky Creek rural fire brigade, which unfolded over a three day period (23-25 March 2005) in the Sepentine Creek Catchment at Redland Bay. This event was also captured by NASA's MODIS instru-mentation from the Terra Satellite recording a temperature of 312.4K. NDVI values were calculated for this area and resolution merge operations undertaken in order to enhance the fire scar for mapping purposes. The image below shows a marked reduction in photsythetic activity in the area at around 9.00am on the 28th of March 2005.



NDVI values have been rescaled and partitioned (woody and herbaceous) with the woody component subtracted from the seven year average, and the herbaceous component subtracted from modelled her baceous NDVI, which is based on drying patterns and the number of days since rain. The hebaceous component is modelled seperately due to the high variability and marked response rate to meteorological conditions. The results of these operations are re-combined to produced the a continuous scale image of the event in terms of burn intensity and 'patchyness'. While this output is not essential to produce fire scar footprints as vector data, the data is very useful for calculating fuel reduction as part of Rastermatics remote fuel monitoring system. The image below shows the result overlayed on 2006 SPOT 5 imagery held by RCC GIS. Simplified vector polygons are then generated and appended to the bushfire history data base (see main map).



1. Fire history data for the Southern Moreton Bay Islands collected by Rural Brigade Officers include geodetic coordinates that have been truncated to an extent that prevents usefull locational information being extracted through their use. While the six figure eastings/northings system employed by QFRS is also somewhat generalised, this method of recording locations in the field represents a vast improvement over the truncated geodetic option. Ideally full MGA/GDA eastings and northings should be OUNCIL PROPERTY. EXTINGUISHED entered using GPS technology in all cases.

2. Fire frequency in urban conservation areas is, in many instances, currently significantly higher than recommended intervals due to apparent arson attacks. This is likely to result in altered floristic composition and structure and may degrade the biodiversity values of these areas. Also resultant altered fuel complexes may produce more difficult supression scenarios for future wild fire events. 3. Very high fuel loads have been recorded in parts of the LGA. For example accumulated fuel in excess of 30 tonnes per hectare have been recorded in the German Curch Road Area. It is recommended that prescibed burning continues and systematic fuel load monitoring is undertaken for RCC LGA.