Australian Heritage Database

Places for Decision

Class : Natural

Item: 1

Identification

List: **National Heritage List**
Name of Place: The Tarkine
Other Names: Tarkine Wilderness Area
Place ID: 105751
File No: 6/02/031/0052
Primary Nominator:
Nomination Date: 05/07/2004
Principal Group: Temperate environments

Status

Legal Status: 25/01/2011 - Nominated place
Admin Status: 20/05/2011 - Included in FPAL - under assessment by AHC

Assessment

Assessor:
Recommendation:
Assessor's Comments: Emergency listing lapsed 10 Dec 2010 after no min decision taken - s324JQ(4). AHC72 Sept 2012 for finals
Other Assessments: :

Location

Nearest Town: Savage River
Distance from town (km):
Direction from town:
Area (ha): 439000
Address: Waratah Rd, Savage River, TAS, 7321
LGA: Circular Head Municipality TAS
Waratah - Wynyard Municipality TAS
West Coast Municipality TAS

Location/Boundaries:
About 439000ha, located in north-west Tasmania, comprising an area bounded by a line commencing at the most south-western corner of Pieman River State Reserve (approximate MGA point Zone 55G CP 326670E 5383605N),
then northerly via the Pieman River State Reserve boundary to the north western corner of the reserve at approximate MGA point 326565E 5385305N,
then northerly via the LWM to its intersection with the Arthur-Pieman Conservation Area boundary at approximate MGA point 306065E 5432790N,

then via straight lines joining the following MGA points consecutively: 306865E 5432795N, 306397E 5434010N,
then directly to the intersection of the Arthur-Pieman Conservation Area boundary with the LWM at approximate MGA point 305980E 5433760N,
then northerly via the LWM to its intersection with the Arthur-Pieman Conservation Area boundary at approximate MGA point 306235E 5434320N,
then via straight lines joining the following MGA points consecutively: 306270E 5434265N, 306280E 5434235N, 306290E 5434240N, 306315E 5434205N, 306483E 5434382N, 306495E 5434400N,
then directly to the intersection of the LWM with the Arthur-Pieman Conservation Area boundary at approximate MGA point 306370E 5434460N,
then northerly via the LWM to its intersection with the Arthur-Pieman Conservation Area boundary at approximate MGA point 305485E 5438560N,
then via straight lines joining the following MGA points consecutively: 305547E 5438827N, 305560E 5438843N, 305552E 5438851N, 305611E 5439119N, 305647E 5439096N, 305691E 5439164N, 305629E 5439204N, 305657E 5439332N, 305397E 5439778N, 305224E 5439700N, 305191E 5439710N, 305182E 5439682N, 305184E 5439682N,
then directly to the intersection of the LWM with the Arthur-Pieman Conservation Area boundary at approximate MGA point MGA point 305150E 5439665N,
then northerly via the LWM to its intersection with the Arthur-Pieman Conservation Area boundary at approximate MGA point 304840E 5441105N,
then via straight lines joining the following MGA points consecutively: 304890E 5440970N, 304865E 5440965N, 304890E 5440920N, 304910E 5440930N, 305935E 5440860N, 305165E 5440995N, 305165E 5441185N,
then directly to the intersection of the LWM with the Arthur-Pieman Conservation Area boundary at approximate MGA point 304910E 5441185N,
then northerly via the LWM to its intersection with the Arthur-Pieman Conservation Area boundary at approximate MGA point 304295E 5443425N,
then via straight lines joining the following MGA points consecutively: 304765E 5443425N, 304765E 5444285N,
then directly to the intersection of the LWM with the Arthur-Pieman Conservation Area boundary at approximate MGA point 304495E 5444285N,
then northerly and easterly via the Arthur-Pieman Conservation Area boundary to its intersection with the southern bank of the Arthur River at approximate MGA point 304235E 5453125N,
then upstream via the left bank of Arthur River to its intersection MGA easting 308930E (approximate MGA point 308930E 5452635N),
then via straight lines joining the following MGA points consecutively: 308920E 5452480N, 308712E 5452484N, 308496E 5452347N,
then directly to the intersection of the boundary of the Arthur-Pieman Conservation Area with MGA easting 308410E (approximate MGA point 308410E 5451835N),
then easterly via the Arthur-Pieman Conservation Area boundary to its intersection with MGA easting 309310E (approximate MGA point 309310E 5451885N),
then via straight lines joining the following MGA points consecutively: 309418E 5451885N, 309928E 5451299N, 309860E 5451062N, 310003E 5450894N, 310029E 5450680N, 310214E 5450574N, 310412E 5450284N, 310230E 5450098N, 310234E 5449889N, 310012E 5449784N, 309800E 5449455N, 310173E 5449459N, 309133E 5448704N, 308940E 5448873N, 308627E 5448660N, 308334E 5449154N, 308145E 5449065N, 307812E 5449084N, 307221E 5449375N, 306912E 5449284N, 307000E 5448921N, 307362E 5448350N, 307812E 5448384N, 308233E 5448447N, 308474E 5448350N, 308612E 5448184N,
then directly to the intersection of MGA easting 308420E with the boundary of the Arthur-Pieman Conservation Area (approximate MGA point 308420E 5447810N),
then southerly via the Arthur-Pieman Conservation Area boundary to its intersection with MGA easting 309415E (approximate MGA point 309415E 5445130N),

then southerly directly to the intersection of the Nelson Bay River with MGA easting 309110E (approximate MGA point 309110E 5443255N),
then upstream via the middle thread of the Nelson Bay River to its intersection with MGA northing 5442945N (approximate MGA point 309100E 5442945N),
then southerly to the intersection of MGA easting 309090E with the Arthur-Pieman Conservation Area boundary (approximate MGA point 309090E 5442855N),
then south easterly via the Arthur-Pieman Conservation Area boundary to its intersection with an MGA northing 5440235N (approximate MGA point 311157E 5440235N),
then due east to the intersection of the Arthur-Pieman Conservation Area boundary with MGA northing 5440235N (approximate MGA point 311585E 5440235N),
then north westerly via the Arthur-Pieman Conservation Area boundary to its intersection with MGA easting 310715E (approximate MGA point 310715E 5441860N),
then due north to the intersection of the Nelson Bay River with MGA easting 310707E (approximate MGA point 310707E 5442010N),
then upstream via the middle thread of the Nelson Bay River to its confluence with an unnamed creek at approximate MGA point 311105E 5441845N,
then upstream via the middle thread of the unnamed creek to its confluence with an unnamed creek at approximate MGA point 311965E 5441065N,
then directly to MGA point 312443E 5440784N,
then via straight lines joining the following MGA points consecutively: 313641E 5440784N, 313787E 5441230N, 313597E 5441476N, 313601E 5441687N, 313524E 5442011N, 313684E 5442343N, 313860E 5442460N, 314374E 5442382N, 314542E 5442443N, 314509E 5442582N, 314262E 5442670N, 314299E 5442819N, 314486E 5442934N, 314555E 5443124N, 314391E 5443392N, 314710E 5443927N, 314922E 5443802N, 314952E 5443414N, 315125E 5442973N, 315263E 5442960N, 315505E 5442740N, 315509E 5442594N, 315366E 5442499N, 315401E 5442378N, 315634E 5442507N, 315630E 5442973N, 315716E 5443185N, 315751E 5443029N, 315979E 5443073N, 316027E 5443168N, 315841E 5443228N, 315781E 5443405N, 315906E 5443534N, 316014E 5443919N, 316234E 5443927N, 315936E 5444298N, 316243E 5444272N, 316445E 5444083N, 316359E 5443681N, 316441E 5443560N, 316769E 5443517N, 317063E 5443668N, 317136E 5443893N, 317373E 5443897N, 317481E 5443772N, 317934E 5443521N, 318016E 5442952N, 318172E 5442727N, 318461E 5442080N, 318703E 5441989N, 319405E 5440319N, 319352E 5440164N, 319225E 5440099N, 319210E 5440013N, 319057E 5440033N, 318906E 5439963N, 318974E 5439672N, 319194E 5439497N, 319654E 5439532N, 319796E 5439499N, 319860E 5439420N, 319964E 5439420N, 319986E 5439504N, 320290E 5439486N, 320649E 5439676N, 320704E 5439941N, 320995E 5440700N, 321060E 5440653N, 321130E 5440453N, 321240E 5440427N, 321222E 5440321N, 321372E 5440207N, 321432E 5440053N, 321590E 5440005N, 321826E 5440118N, 321979E 5440112N, 322067E 5440199N, 321978E 5440382N, 322124E 5440613N, 322336E 5440685N, 322548E 5440899N, 322571E 5440776N, 322479E 5440614N, 322305E 5440500N, 322459E 5440257N, 322407E 5440085N, 322440E 5439933N, 322368E 5439664N, 322247E 5439531N, 322204E 5439391N, 322423E 5439321N, 322429E 5439238N, 322519E 5439248N, 322618E 5439061N, 322706E 5438968N, 322739E 5438858N, 322878E 5438780N, 322997E 5438833N, 323198E 5438812N, 323280E 5438842N, 323469E 5439459N, 323570E 5439519N, 323714E 5439358N, 323635E 5439023N, 323641E 5438808N, 323416E 5438821N, 323363E 5438757N, 323408E 5438603N, 323278E 5438554N, 323158E 5438307N, 322925E 5438161N, 322748E 5437930N, 322845E 5437729N, 322711E 5437654N, 322593E 5437689N, 322473E 5437612N, 322685E 5437289N, 323024E 5437729N, 323132E 5437508N, 323003E 5437480N, 322965E 5437364N, 323024E 5437244N, 322873E 5437169N, 323055E 5436962N, 323396E 5437002N, 323384E 5436820N, 323655E 5436738N, 323768E 5436794N, 323747E 5437056N, 323658E 5437313N, 323700E 5437614N, 323472E 5438163N, 323514E 5438177N, 323799E 5437892N, 323912E 5437082N, 324428E 5437058N, 324489E 5436898N, 324699E 5436743N, 324812E 5436825N, 324697E 5437041N, 324628E 5437199N, 324802E 5437506N, 324776E 5437711N, 324662E 5437927N, 324781E 5438161N, 324700E

5438200N, 324605E 5438766N, 324453E 5438987N, 324484E 5439356N, 324970E 5439680N, 325264E 5439423N, 325241E 5439222N, 325479E 5439211N, 325667E 5439303N, 325758E 5439500N, 325804E 5440005N, 325448E 5440504N, 324997E 5440711N, 324647E 5440687N, 324652E 5440794N, 324794E 5440912N, 325091E 5441015N, 325113E 5440957N, 325060E 5440826N, 325221E 5440722N, 325310E 5440749N, 325409E 5440687N, 325424E 5440742N, 325423E 5440923N, 325537E 5441052N, 325526E 5441214N,
then northerly to the intersection of Blackwater Rivulet with MGA easting 325495E (approximate MGA point 325495E 5441355N),
then upstream via middle thread of Blackwater Rivulet to its confluence with an unnamed creek (approximate MGA point 325564E 5441396N),
then upstream via the middle thread of the unnamed creek to its intersection with MGA northing 5441279N (approximate MGA point 326470E 5441279N),
then due east to the intersection with Blackwater Road,
then northerly via the eastern side of Blackwater Road to its intersection with an unnamed spur road at approximate MGA point 327883E 5444035N,
then westerly via the northern side of the unnamed spur road to its intersection with MGA northing 5444146N (approximate MGA point 327400E 5444146N),
then directly to MGA point 327400E 5445800N,
then due east to the intersection with Stephens Rivulet,
then upstream via the middle thread of Stephens Rivulet to its confluence with an unnamed creek at approximate MGA point 328200E 5444942N,
then upstream via the middle thread of the unnamed creek to its intersection with Blackwater Road, (approximate MGA point 328715E 5444860N),
then via straight lines joining the following MGA points consecutively: 328930E 5444628N, 329429E 5444316N, 330195E 5444437N, 330632E 5444364N, 330629E 5444531N, 330289E 5444964N, 329960E 5445134N, 330091E 5445755N,
then directly to the intersection of the boundary of the Trowutta Forest Reserve with MGA easting 330420E (approximate MGA point 330420E 5446590N),
then westerly and north easterly via the boundary of the Trowutta Forest Reserve as gazetted on 18 December 1998 to its intersection with the south west corner of the Roger River State Reserve (the area of Trowutta Forest Reserve gazetted on 12 July 2006 that is wholly within the area of Trowutta Forest Reserve as gazetted on 18 December 1998 is included),
then northerly, easterly and southerly via the western, northern and eastern boundaries of the Roger River State Reserve to its intersection with the Trowutta Forest Reserve boundary (approximate MGA point 334850E 5451950N),
then southerly via the eastern boundary of the Trowutta Forest Reserve as gazetted on 18 December 1998 to its intersection with the south west corner of Land Parcel ID (LPI) 1/118507 (approximate MGA point 334850E 5446340N),
then easterly via the southern boundary of LPI 1/118507 to its intersection with the western boundary of LPI 1/237812,
then southerly and easterly via the boundary of LPI 1/237812 and its alignment to its intersection with the left bank of Arthur River (approximate MGA point 335685E 5446195N),
then upstream via the left bank of Arthur River to its confluence with Julius River,
then upstream via the middle thread of the Julius River to its intersection with the northern most point of the boundary of the Julius River Forest Reserve,
then south easterly via the north eastern boundary of the Julius River Forest Reserve and its alignment to its intersection with Lake Chisholm Road (approximate MGA point 337975E 5442630N),
then south westerly via the north western boundary of Lake Chisholm Road to its intersection with Sumac Road,
then easterly via the southern boundary of Sumac Road to its intersection with Sumac Rivulet (approximate MGA point 338010E 5441120N),
then upstream via the middle thread of Sumac Rivulet to its intersection with the boundary of the Sumac

Forest Reserve (approximate MGA point 337400E 5440095N),
then south westerly and easterly via the boundary of Sumac Forest Reserve to a corner located at approximate MGA point 335640E 5436500N,
then directly to the intersection of Sumac Road with an unnamed road at approximate MGA point 335997E 5436665N,
then north easterly via the southern boundary of Sumac Road to its junction with Bertha Road,
then easterly via the southern boundary of Bertha Road to its intersection with MGA easting 343375E (approximate MGA point 343375E 5437375N),
then via straight lines joining the following MGA points consecutively: 344035E 5437474N, 344420E 5437420N, 344626E 5437487N, 344854E 5437651N, 344864E 5437944N, 345135E 5438898N, 345418E 5438932N, 345671E 5439198N, 345579E 5439476N,
then directly to the confluence of Rapid River with an unnamed creek (approximate MGA point 345712E 5439595N),
then upstream via the middle thread of Rapid River to its confluence with an unnamed creek at approximate MGA point 346885E 5437660N,
then northerly directly to the intersection of an unnamed access road with an unnamed local road (approximate MGA point 347055E 5439150N),
then northerly via the unnamed local road to its intersection with Tayatea Road (approximate MGA point 347610E 5440385N),
then easterly via Tayatea Road to its intersection with MGA northing 5442730N (approximate MGA point 351590E 5442730N),
then via straight lines joining the following MGA points consecutively: 352128E 5443057N, 352285E 5442900N, 352398E 5442965N, 352378E 5443251N, 353677E 5443114N,
then north easterly to the intersection of two unnamed roads (approximate MGA point 354533E 5443860N)
then south easterly via an unnamed road to its intersection with an unnamed road at approximate MGA point E 355125 5442595N,
then north easterly to MGA point 357015E 5444085N,
then directly to the confluence of Neasey Creek with an unnamed creek (approximate MGA point 359360NE 5445300N),
then downstream via the middle thread Neasey Creek to its confluence with Arthur River,
then downstream via the left bank of Arthur River to its intersection with MGA northing 5448435N (approximate MGA point 361030E 5448435N),
then north easterly to the intersection of an unnamed road with MGA easting 361510E (approximate MGA point 361510E 5449130N),
then north easterly via the unnamed road to its intersection with MGA northing 5449705N (approximate MGA point 362340E 5449705N),
then via straight lines joining the following MGA points consecutively: 362380E 5449904N, 362612E 5450001N, 362729E 5449988N, 362725E 5449869N, 362636E 5449875N, 362556E 5449589N, 362713E 5449323N, 363078E 5449699N, 363196E 5449980N, 363319E 5449927N, 363576E 5449918N, 363676E 5450048N, 363666E 5450164N, 363564E 5450255N, 363464E 5450139N, 363255E 5450241N, 363171E 5450157N, 362897E 5450160N, 362816E 5450062N, 362724E 5450042N,
then westerly to the intersection of Rabalga Road with MGA northing 5450190N (approximate MGA point 362485E 5450190N),
then northerly via Rabalga Road to its intersection with MGA northing 5450580N (approximate MGA point 362425E 5450580N),
then via straight lines joining the following MGA points consecutively: 362565E 5450641N, 362654E 5450452N, 362819E 5450377N, 363104E 5450635N, 363364E 5450704N, 363343E 5450824N, 363210E 5450828N, 363151E 5450858N, 362999E 5450850N, 362893E 5450743N, 362879E 5450810N, 362957E 5450892N, 363059E 5450897N, 363136E 5450921N, 363255E 5450861N, 363309E 5450899N, 363220E 5451066N, 363143E 5451085N, 362861E 5450985N, 362852E

5450921N, 362819E 5450925N, 362806E 5450990N, 362759E 5451029N, 362798E 5451068N, 362861E 5451040N, 363147E 5451152N, 363089E 5451245N, 362984E 5451289N, 363028E 5451394N, 362994E 5451494N, 363231E 5451657N, 363335E 5451641N, 363517E 5451806N, 363516E 5451854N, 364177E 5452658N,
then easterly to the intersection with an unnamed creek with MGA northing 5452680N (approximate MGA point 365255E 5452680N),
then downstream via the middle thread of the unnamed creek to its confluence with Dip River (approximate MGA point 365324E 5452785N),
then downstream via the middle thread of the Dip River to its confluence with an unnamed creek (approximate MGA point 364790E 5453560N)
then upstream via the middle thread of the unnamed creek to its intersection with MGA northing 5453740N (approximate MGA point 366126E 5453740N),
then north easterly to the intersection of Black River with MGA northing 5454540N (approximate MGA point 366750E 5454540N)
then upstream via the middle thread of Black River to its intersection with MGA easting 367710E (approximate MGA point 367710E 5453547N),
then directly to MGA point 367815E 5453117N,
then south easterly to the north west corner of LPI 1/40689,
then southerly via the western boundary of LPI 1/40689 to its intersection with the northern boundary of LPI 1/40690,
then westerly and southerly via the northern and western boundaries of LPI 1/40690 to its intersection with the northern boundary of LPI 1/121420,
then westerly and southerly via the boundary of LPI 1/121420 to its intersection with the northern boundary of LPI 1/40692,
then westerly, southerly and easterly via the boundary of LPI 1/40692 to its intersection with the south west corner of LPI 1/121420,
then easterly and northerly via the boundary of Land Parcel 1/121420 to its intersection with the south west corner of Land Parcel 1/121421,
then easterly via the southern boundary of LPI 1/121421 to its intersection with MGA easting 369811E (approximate MGA point 369811E 5450873N)
then via straight lines joining the following MGA points consecutively: 370003E 5450602N, 369057E 5449893N, 368833E 5449639N, 368451E 5449858N, 368496E 5450034N, 368302E 5450121N, 368123E 5449859N, 367973E 5450103N, 368152E 5450247N, 368079E 5450491N, 367809E 5450550N, 367695E 5450473N, 367651E 5450264N, 367626E 5449546N, 367689E 5449403N, 368010E 5449464N, 368427E 5449700N, 368801E 5449564N, 368928E 5449303N, 368419E 5448082N, 368364E 5448082N,
then north westerly to the intersection of Keith River Road with MGA easting 368345E (approximate MGA point 368345E 5448106N)
the south westerly via Keith River Road to its intersection with an unnamed road (approximate MGA point 367260E 5446860N)
then due west to the intersection with middle thread of Arthur River,
then upstream via the middle thread of Arthur River to its intersection with MGA easting 370330E (approximate MGA point 370330E 5440910N)
then via straight lines joining the following MGA points consecutively: 370383E 5441061N, 370570E 5441312N,
then north easterly to the intersection of Relapse Creek Road with MGA easting 370650E (approximate MGA point 370650E 5441530N)
then westerly via Relapse Creek Road to its intersection with Relapse Link (approximate MGA point 369535E 5441780N),
then north easterly via Relapse Link to its intersection with Relapse Creek (approximate MGA point 369660E 55441995N)
then via straight lines joining the following MGA points consecutively: 369920E 5441865N, 370141E

5442042N, 370416E 5442042N,
then northerly to the intersection of Relapse Link with MGA easting 370490E (approximate MGA point 370490E 5442621N),
then easterly via Relapse Link to its intersection with MGA easting 370950E (approximate MGA point 370950E 5442750N),
then directly to MGA point 371277E 5442440N,
then north easterly to the intersection of Pruana Road with MGA easting 371555E (approximate MGA point 371555E 5443165N),
then easterly via Pruana Road to its intersection with Campbell Road,
then northerly, easterly, southerly and westerly via the Pruana Forest Reserve boundary to its intersection with the junction of Pruana Road and Farquhars Road,
then westerly via Farquhars Road to its intersection with an unnamed road at approximate MGA point 372365E 5440940N,
then south westerly and south easterly via the unnamed road to its intersection with the Arthur River Forest Reserve boundary at approximate MGA point 372590E 5440555N,
then easterly via the Arthur River Forest Reserve boundary to its intersection with the south east corner of LPI 1/211201,
then north easterly to the to the north east corner of LPI 1/211201,
then easterly via the northern boundary of LPI 1/211201 to its intersection with the south east corner of LPIl 1/15549,
then easterly and southerly via the boundary of LPI 1/229497 to its south west corner,
then easterly via the southern boundary of LPI 1/229497 to its intersection with MGA easting 378640E (approximate MGA point 378640E 5438900N)
then via straight lines joining the following MGA points consecutively: 379000E 5438715N, 379147E 5438482N, 379365E 5438433N, 379731E 5438614N,
then directly to the south west corner of LPI 1/239208,
then easterly via the northern boundary of Land Parcel 1/134960 to its intersection with the north west corner of LPI 1/130624,
then easterly and southerly via the northern and eastern boundaries of LPI 1/130624 to its south east corner,
then southerly via the eastern boundary of LPI 1/134960 to its intersection with MGA northing 5436957N (approximate MGA point 382010E 5436957N),
then westerly to the confluence of two unnamed creeks at approximate MGA point 381450E 5436980
then downstream via an unnamed creek to its confluence with Hellyer River,
then downstream via the right bank of Hellyer River to its intersection with the boundary of the Arthur River Forest Reserve (approximate MGA point 376320E 5436255N),
then westerly and southerly via the Arthur Forest Reserve boundary to its intersection with the confluence of Arthur River and Pykes Creek,
then upstream via the middle thread of Arthur River to its intersection with the boundary of Savage River National Park,
then southerly via the Savage River National Park boundary to its intersection with the Savage River Regional Reserve boundary (approximate MGA point 374315E 5427640N),
then southerly via the Savage River Regional Reserve boundary to its intersection with an unnamed creek at approximate MGA point 374200E 5423435N,
then upstream via the left bank of Arthur River to its confluence with Wandle River,
then upstream via the middle thread of Wandle River to its intersection with the boundary of the Deep Gully Forest Reserve,
then easterly, southerly and westerly via the northern, eastern and southern boundaries of Deep Gully Forest Reserve to its intersection with MGA northing 5412860N (approximate MGA point 379353E 5412860N),
then downstream via the middle thread of Haynes Creek to its confluence with an unnamed creek at approximate MGA point 378125E 5413350N,

then upstream via the middle thread of the unnamed creek to its intersection with MGA northing 5413810N (approximate MGA point 378147E 5413810N)
then via straight lines joining the following MGA points consecutively: 378030E 5413932N, 377966E 5413981N, 377941E 5413976N, 377909E 5413924N,
then southerly to the intersection of MGA northing 5413700N with an unnamed creek (approximate MGA point 377858E 5413700N),
then downstream via the unnamed creek to its confluence with Waratah River at approximate MGA point 377775E 5413360N,
then westerly via the Deep Gully Forest Reserve boundary to its intersection with the confluence of Cliff Creek and an unnamed creek at approximate MGA point 375560E 5413627N,
then south westerly directly to the confluence of Tinstone Creek and Ritchie Creek,
then upstream via the middle thread of Ritchie Creek to its confluence with an unnamed creek at approximate MGA point 375930E 5409170N,
then upstream via the middle thread of the unnamed creek to its confluence with an unnamed creek at approximate MGA point 375885E 5408720N,
then south westerly to the intersection of MGA easting 375810E with the northern boundary of LPI 1/204125 (approximate MGA point 375810E 5408635N),
then south westerly and easterly via the boundary of LPI 1/204125 to its intersection with the western road reserve boundary of Waratah Road,
then south westerly via the western road reserve boundary of Waratah Road to its intersection with an unnamed road at approximate MGA point 373895E 5406080N,
then easterly via the unnamed road to its intersection with an unnamed road at approximate MGA point 377757E 5404507N,
then southerly via the unnamed road to its intersection with Netherby Road (approximate MGA point 377513E 5403548N),
then easterly via Netherby Road to its intersection with MGA easting 378900E (approximate MGA point 378900E 5402990N),
then via straight lines joining the following MGA points consecutively: 378668E 5401837N, 378813E 5401183N, 379158E 5400924N, 379512E 5401293N,
then easterly to the intersection of MGA northing 5401080N with the western boundary of LPI 1/144941 (approximate MGA point 380846E 5401080N),
then southerly and easterly via the western and southern boundaries of LPI 1/144941 to its intersection with MGA easting 387912E (approximate MGA point 387912E 5399013N),
then via straight lines joining the following MGA points consecutively: 3900008E 5396565N, 390982E 5395847N, 391464E 5395691N, 391651E 5394757N, 391157E 5394258N, 390999E 5394362N, 390865E 5394256N, 391025E 5394088N, 390829E 5393873N, 391543E 5393236N, 391900E 5393313N, 392004E 5394032N, 393265E 5394573N, 393821E 5395267N, 394843E 5394810N,
then easterly to the confluence of Southwell River with an unnamed creek (approximate MGA point 394928E 5394822N),
then easterly via the Reynolds Falls Nature Recreation Area boundary to approximate MGA point 397616E 5396243N,
then via straight lines joining the following MGA points consecutively: 396910E 5398183N, 398180E 5398616N,
then directly to the intersection of MGA easting 398185E with the southern boundary of LPI 1/144941 (approximate MGA point 398185E 5399210N),
then easterly via the southern boundary of LPI 1/144941 to its intersection with MGA easting 403177E (approximate MGA point 403177E 5399265N),
then south westerly to MGA point 402234E 5397977N,
then westerly to the intersection of MGA northing 5398260N with MacKintosh Creek (approximate MGA point 401664E 5398260N),
then south westerly via the middle thread of MacKintosh Creek to its confluence with an unnamed creek (399854E 5394658N),

then via straight lines joining the following MGA points consecutively: 400085E 5394447N, 400107E 5393511N, 399611E 5394171N, 398961E 5393446N, 398696E 5392331N, 398938E 5391119N, 398652E 5391085N, 398343E 5390202N,
then to the intersection of MGA easting 398455E with the southern boundary of Reynolds Falls Nature Recreation Area (approximate MGA point 398455E 5389314N),
then westerly and south westerly via the Reynolds Falls Nature Recreation Area boundary to its intersection with the HEC land boundary (approximate MGA point 387820E 5384860N),
then south westerly and westerly via the HEC land boundary on the northern shoreline of Lake Rosebery and Lake Pieman to its intersection with the south west corner of Meredith Range Regional Reserve (approximate MGA point 352110E 5372434N),
then northerly via the western boundary of Meredith Range Regional Reserve to its intersection with MGA northing 5374184N (approximate MGA point 352110E 5374184N),
then via straight lines joining the following MGA points consecutively: 351512E 5374384N, 351112E 5375284N, 349512E 5375484N, 347941E 5375805N,
then directly to the confluence of two unnamed creeks at approximate MGA point 347445E 5376340N,
then downstream via the unnamed creek to its confluence with Stringer Creek (approximate MGA point 346820E 5376155N),
then downstream via the middle thread of Stringer Creek to its confluence with Pieman River (approximate MGA point 345225E 5379035N),
then downstream via the middle thread of Pieman River to its intersection with MGA easting 344900E (approximate MGA point 344900E 5379325N),
then directly to MGA point 344080E 5379320N,
then southerly to the intersection of the High Water Mark of Lake Pieman with MGA easting 344085E (approximate MGA point 344085E 5378960N),
then southerly via the HWM of the western bank of Lake Pieman to its intersection with MGA northing 5373678N (approximate MGA point 345419E 5373678N),
then north easterly to the intersection of MGA northing 5373696N with an unnamed creek (approximate MGA point 345468E 5373696N),
then upstream via the middle thread of the unnamed creek to its intersection with MGA northing 5372006N (approximate MGA point 346146E 5372006N),
then via straight lines joining the following MGA points consecutively: 345312E 5371610N, 345312E 5371186N, 344110E 5370884N,
then directly to the intersection of MGA easting 344110E with the Granville Tramway (approximate MGA point 344110E 5370240N),
then westerly via the northern boundary of that tramway to its intersection with Heemskirk Road (approximate MGA point 341980E 5370850N),
then northerly via the eastern road reserve boundary of Heemskirk Road to its intersection with an unnamed creek (approximate MGA point 340915E 5374865N),
then downstream via the middle thread of the unnamed creek to its confluence with Duck Creek (approximate MGA point 338332E 5375121N),
then downstream via the middle thread of Duck Creek to the coastline (Low Water Mark),
then northerly via the LWM to its intersection with the alignment of the southern boundary of LPI 1/238463 (approximate MGA point 326685E 5380460N),
then easterly, northerly and westerly via the southern eastern and northern boundaries (and the westerly alignment of the northern boundary) of LPI 1/238463 to its intersection with the LWM (approximate MGA point 326530E 5381290N),
then northerly via the LWM to the commencement point.

Also included are the following:

All that part of Arthur Pieman Conservation Area to the west of Arthur River Road and to the north of Arthur River.

West Point State Reserve.

Kings Run Private Nature Reserve.

The following areas are excluded:
(1) In the Rebecca Creek area the following are excluded:
a) The area bounded by a line commencing at the intersection of the eastern boundary of LPI 1/104427 and the Rebecca Creek Forest Reserve at approximate MGA point 311085E 5437065N,
then easterly via the Rebecca Creek Forest Reserve to its intersection with MGA easting 313330E (approximate MGA point 313330E 5435785N),
then via straight lines joining the following MGA points consecutively: 313525E 5435763N, 313696E 5435589N, 313912E 5435484N, 313812E 5435284N, 313911E 5435189N, 313812E 5435084N, 313612E 5435084N, 313612E 5434884N, 313724E 5434878N, 313569E 5434622N, 313237E 5434562N, 313239E 5434380N, 313039E 5434239N, 312674E 5434084N, 312508E 5433888N, 312385E 5433830N, ,
then southerly to the intersection of MGA easting 312372E with Little Eel Creek (approximate MGA point 312372E 5433740N),
then easterly via the middle thread of Little Eel Creek to its intersection with the western boundary of LPI 1/240762,
then northerly, easterly southerly and westerly via the boundary of LPI 1/138222 to its intersection with the south west corner of LPI 1/240762,
then via straight lines joining the following MGA points consecutively: 313284E 5433098N, 313370E 5433013N, 313456E 5433036N, 313480E 5432937N, 313306E 5432683N, 312979E 5432650N, 312694E 5432542N,
then southerly to the intersection of MGA easting 312688E with Big Eel Creek (approximate MGA point 312688E 5432300N),
then westerly via the middle thread of Big Eel Creek to its intersection with MGA easting 309966E (approximate MGA point 309966E 5432478N,),
then via straight lines joining the following MGA points consecutively: 309998E 5432633N, 310049E 5433021N, 309933E 5433243N, 309895E 5433390N, 309774E 5433477N,
then north westerly to the intersection of an unnamed road with MGA northing 5433820N (approximate MGA point 309640E 5433820N),
then north westerly via the unnamed road to its intersection with the alignment of the western boundary of LPI 1/242182 (approximate MGA point 309105E 5434270N),
then northerly via that alignment and the western boundary of LPI 1/242182 to the south east corner of LPI 1/239031,
then westerly via the southern boundary of LPI 1/239031 to its intersection with MGA easting 309065E (approximate MGA point 309065E 5434700N),
then south westerly to the intersection of MGA easting 308960E with an unnamed road (approximate MGA point 308960E 5434575N),
then south easterly via the unnamed road to its intersection with Kenneth Creek,
then downstream via the middle thread of Kenneth Creek to its confluence with an unnamed creek at approximate MGA point 308965E 5434465N,
then southerly to the intersection of the Arthur-Pieman Conservation Reserve boundary with MGA easting 308975E (approximate MGA point 308975E 5434420N),
then westerly, northerly and easterly via the Arthur-Pieman Conservation Reserve boundary to its intersection with the south west corner of the Rebecca Creek Forest Reserve,
then easterly via the southern boundary of the Rebecca Creek Forest Reserve and Arthur-Pieman Conservation Reserve boundary to the point of commencement.
b) The Temma Conservation Covenant.
c) Land Parcels 1/209822 and 1/209823.
d) The area bounded by a line commencing at the intersection of MGA easting 312367E and the southern road reserve boundary of Rebecca Road (approximate MGA point 312367E 5437568N),
then directly to the intersection of MGA easting 312532E with the boundary of the Arthur Pieman Conservation Area (approximate MGA point 312532E 5438078N),

then north easterly via the boundary of Arthur Pieman Conservation Area to its intersection with MGA easting 315760mE (approximate MGA point 315760E 5439100N),
then directly to the point on the boundary of the Arthur Pieman Conservation Area that intersects with MGA northing 5438980 (approximate MGA point 316070E 5438980N),
then southerly via the boundary of the Arthur Pieman Conservation Area to its intersection with Rebecca Road,
then westerly via the southern road reserve boundary of Rebecca Road to the commencement point.
(2) An area located at Balfour comprising an area bounded by a line commencing at MGA point 325291E 5430614N,
then via straight lines joining the following MGA points consecutively: 324226E 5430610N, 324235E 5430451N, 323884E 5430270N, 323673E 5430542N, 323054E 5430542N, 322448E 5430090N, 323421E 5428988N, 324784E 5429295N, 325452E 5429835N
then directly to the point of commencement.
(3) The area around Savage River township bounded by a line commencing at the intersection of the Savage River Pipeline Reserve boundary with MGA northing 5406200N (approximate MGA point 349042E 5406200N),
then northerly to the intersection of MGA northing 5407487N with the Savage River Pipeline Reserve boundary (approximate MGA point 349270E E 5407487N),
then via straight lines joining the following MGA points consecutively: 348863E 5407798N, 348416E 5408813N,
then easterly to the intersection of MGA northing 5408813N with the Savage River Pipeline Reserve boundary (approximate MGA point 348910E 5408813N),
then northerly and easterly via the Savage River Pipeline Reserve boundary to its intersection with MGA easting 352140E (approximate MGA point 352140E 5410745N),
then easterly to the intersection of MGA northing 5410695N with the Savage River Regional Reserve boundary (approximate MGA point 352400E 5410695N),
then southerly and easterly via the Savage River Regional Reserve boundary to its intersection with an unnamed road at approximate MGA point 352900E 9406580N,
then via straight lines joining the following MGA points consecutively: 353311E 5406508N, 353311E 5405179N, 352719E 5404200N, 352636E 5403764N,
then westerly to the intersection of MGA northing 5403880N with the Meredith Range Regional Reserve boundary (approximate MGA point 352000E 5403880N),
then southerly via the Meredith Range Regional Reserve boundary to its intersection with MGA northing 5403624N (approximate MGA point 351810E 5403624N),
then via straight lines joining the following MGA points consecutively: 351811E 5403180N, 351361E 5402183N,
then westerly to the intersection of MGA northing 5402183N with the Meredith Range Regional Reserve boundary (approximate MGA point 349114E 5402183N),
then southerly and westerly via the Meredith Range Regional Reserve boundary to approximate MGA point 347611E 5400784N,
then via straight lines joining the following MGA points consecutively: 347611E 5402183N, 347112E 5402183N,
then northerly to the intersection of the Donaldson River Nature Recreation Area boundary with MGA northing 5402675N (approximate MGA point 347106E 5402675N),
then northerly via the Donaldson River Nature Recreation Area boundary to its intersection with the Savage River Pipeline Reserve boundary (approximate MGA point 347933E 5404075N),
then northerly via the Savage River Pipeline Reserve boundary to the point of commencement.
(4) In the Tikkawoppa Plateau area the following lots are excluded:
a) Land Parcels 1/224646, 1/238462, 22/118557, 1/101724, 1/239443, 1/241623, 1 to 3/111147, 1/109751, 1/109376.
b) An area bounded by a line commencing at the south east corner of LP 2/111147,
then southerly via the eastern boundary of LP 1/109751 to its intersection with MGA northing 5380470N

(approximate MGA point 333232E 5380470N),
then via straight lines joining the following MGA points consecutively: 333865E 5380390N, 333940E 5381015N, 334500E 5380950N, 334410E 5380155N,
then easterly to the intersection of MGA easting 334555E with Newdegate Creek (approximate MGA point 334555E 5380130N),
then upstream via the middle thread of Newdegate Creek to its intersection with MGA easting 334935E (approximate MGA point 334935E 5380220N),
then via straight lines joining the following MGA points consecutively: 335010E 5380900N, 334575E 5380945N, 334648E 5381580N, 334015E 5381650N, 333939E 5381019N,
then westerly directly to the point of commencement.
(5) The following Land Parcels located to the east of Hatfield River Forest Reserve: LPI 1/209046, 1/209045, 1/208944, 1/209880, 1/209641 and 1/209645. Also excluded are two Land Parcels located between the southern boundary of LPI 1/209641 and the northern boundary of LPI 1/209645.
(6) The following area located about 6 kilometres north east of Bulgobac comprising an area bounded by a line commencing at MGA point 386329E 5396888N, then via straight lines joining the following MGA points consecutively: 386407E 5397082N, 386813E 5397159N, 386934E 5397116N, 386924E 5396834N, 387076E 5396782N, 387140E 5396609N, 387267E 5396647N, 387419E 5396531N, 387367E 5396188N, 387468E 5396151N, 387431E 5396005N, 387509E 5395966N, 387535E 5395885N, 387724E 5395919N, 387580E 5395465N, 387149E 5395459N, 386506E 5395524N, 386233E 5396061N, 386185E 5396324N, 386269E 5396610N, 386113E 5396728N, 386212E 5396893N, then directly to the point of commencement.
(7) The following area located about 4km north west of Farrell comprising an area bounded by a line commencing at MGA point 376942E 5384532N, then via straight lines joining the following MGA points consecutively:, 377807E 5384532N, 377815E 5384251N, 377776E 5384135N, 377904E 5383888N, 378014E 5383817N, 378189E 5383917N, 378493E 5383929N, 378537E 5383866N, 378487E 5383854N, 378438E 5383699N, 378552E 5383589N, 378503E 5383414N, 378458E 5383442N, 378432E 5383510N, 378332E 5383442N, 378077E 5383430N, 377917E 5383449N, 377797E 5383394N, 377562E 5383103N, 377273E 5383314N, 377202E 5383499N, 377353E 5383730N, 377261E 5383858N, 377265E 5384017N, 377373E 5384202N, 377249E 5384226N, 377208E 5384088N, 377033E 5384082N, 376946E 5384143N,
then directly to the point of commencement.
(8) a) The following area located about 12km west of Waratah comprising an area bounded by a line commencing at MGA point 365003E 5408299N, then via straight lines joining the following MGA points consecutively: 364175E 5407032N, 364622E 5406280N, 365365E 5406789N, 365556E 5407153N, 365916E 5408230N, 365529E 5408512N, then directly to the point of commencement.
b) An area located about 8km west of Waratah comprising an area bounded by straight lines joining the following MGA points consecutively: 369193E 5410048N, 369392E 5410047N, 369392E 5409707N, 369193E 5409747N, then directly to the point of commencement.
(9) An area at Corinna comprising Mining Lease 25M/2003.
(10) An area located 2km south west of Reece Dam comprising Mining Lease 22M/1994.
(11) An area bounded by a line commencing at MGA point 359974E 5434127N, then via straight lines joining the following MGA points consecutively: 360090E 5433971N, 360078E 5433903N, 359987E 5433935N, 359962E 5434033N, then directly to the point of commencement.
(12) The following four areas in the vicinity of Horton River are excluded:
(a) An area bounded by a line joining the following MGA points consecutively: 340259E 5434786N, 340660E 5434493N, 340679E 5434149N, 340446E 5433494N, 339834E 5432694N, 339688E 5432687N, 339623E 5432939N, 339606E 5434149N, 339909E 5434543N, then directly to the commencement point.
(b) An area bounded by a line commencing at the confluence of the Horton River with an unnamed creek at approximate MGA point 337035E 5427649N,
then via straight lines joining the following MGA points consecutively: 338316E 5427948N, 337697E 5428263N, 337856E 5428767N, 337655E 5429035N, 337945E 5429404N, 337602E 5429631N,

337483E 5429957N, 337805E 5430052N, 338279E 5430052N, 338535E 5429846N, 338543E 5429697N, 338345E 5429361N, 338568E 5429105N, 338927E 5429199N, 339177E 5429172N, 339493E 5428996N, 339913E 5429326N, 340211E 5429623N, 340269E 5429805N, 340188E 5430212N, 340515E 5430700N, 340888E 5431051N, 341103E 5431026N, 341252E 5430769N, 341316E 5430558N, 341570E 5430481N, 341737E 5430481N, 341820E 5430661N, 341646E 5431026N, 341614E 5431447N, 341856E 5431569N, 342185E 5431466N, 342390E 5430977N, 341726E 5429986N, 341902E 5429626N, 342777E 5429191N, 342775E 5427870N, 342762E 5427221N, 342341E 5426742N, 342459E 5426229N, 342167E 5425801N, 342159E 5425405N, 342859E 5425548N, 343001E 5425627N, 343265E 5425305N, 343488E 5425619N, 343662E 5425603N, 343663E 5425219N, 343480E 5425033N, 343249E 5424505N, 343831E 5424635N, 344083E 5424587N, 343495E 5423828N, 343084E 5423341N, 342637E 5422859N, 342475E 5422996N, 342522E 5423192N, 342209E 5423382N, 342276E 5423794N, 342101E 5423919N, 341870E 5423646N, 341745E 5423841N, 341804E 5424100N, 341316E 5424659N, 341129E 5424927N, 340863E 5424604N, 340285E 5424406N, 339932E 5424319N, 339707E 5424488N, 339076E 5424378N, 338745E 5424028N, 337775E 5423929N, 337582E 5424072N, 337241E 5424336N, 337016E 5424612N, 336637E 5424513N, 336204E 5424491N, 335587E 5424573N, 335233E 5424834N, 335227E 5424933N, 335523E 5424981N, 335579E 5425078N, 334969E 5425471N, 335825E 5426042N, 336044E 5425883N, 336563E 5425966N, 336856E 5426094N, 336524E 5426548N, 336665E 5426667N, 336869E 5426737N, 336910E 5426859N, 336820E 5427006N, 336587E 5427023N, 336339E 5427113N, 335973E 5426911N, 335852E 5427320N, 335984E 5427444N, 335506E 5428220N, 334908E 5428227N, 334377E 5429140N, 334551E 5429863N, 334335E 5430141N, 334180E 5430410N, 333926E 5430793N, 333446E 5430977N, 333103E 5431043N, 332705E 5430863N, 332302E 5430977N, 332415E 5431411N,
then northerly to the confluence of the Horton River with an unnamed creek at approximate MGA point 332612E 5431795N,
then upstream via the middle thread of the Horton River to the point of commencement.
(c) An area bounded by a line joining the following MGA points consecutively: 339575E 5423149N, 339605E 5423030N, 339533E 5422849N, 339486E 5422657N, 339417E 5422481N, 339198E 5422169N, 339039E 5422123N, 339066E 5422013N, 339194E 5421998N, 339317E 5421829N, 339270E 5421763N, 339293E 5421637N, 339431E 5421595N, 339623E 5421531N, 339767E 5421594N, 339916E 5421853N, 340047E 5421988N, 340027E 5422160N, 340160E 5422354N, 340303E 5422388N, 340345E 5422301N, 340404E 5422280N, 340596E 5422218N, 340804E 5422234N, 340811E 5422040N, 340971E 5422042N, 340958E 5421955N, 340943E 5421909N, 341057E 5421881N, 341215E 5422065N, 341230E 5422160N, 341404E 5422225N, 341563E 5422217N, 341630E 5422082N, 341563E 5422029N, 341447E 5421993N, 341339E 5421980N, 341187E 5421778N, 341002E 5421676N, 340862E 5421699N, 340680E 5421954N, 340640E 5422079N, 340553E 5422172N, 340397E 5422229N, 340482E 5422014N, 340562E 5421965N, 340443E 5421764N, 340315E 5421675N, 340154E 5421646N, 340023E 5421456N, 339981E 5421394N, 339827E 5421301N, 339752E 5421343N, 339721E 5421436N, 339630E 5421393N, 339551E 5421403N, 339280E 5421337N, 339154E 5421395N, 339049E 5421332N, 339005E 5421223N, 338941E 5421117N, 338820E 5421082N, 338708E 5421143N, 338790E 5421264N, 338704E 5421334N, 338615E 5421272N, 338514E 5421277N, 338474E 5421433N, 338352E 5421412N, 338229E 5421525N, 338434E 5421847N, 338612E 5421849N, 338660E 5421889N, 338508E 5421977N, 338285E 5422181N, 338291E 5422262N , 338441E 5422242N, 338482E 5422213N, 338556E 5422248N, 338566E 5422377N, 338676E 5422518N, 338910E 5422715N, 339022E 5422659N, 339044E 5422500N, 339135E 5422485N, 339198E 5422557N, 339161E 5422713N, 339156E 5422799N, 339281E 5422945N, 339284E 5423112N, 339332E 5423189N,
then directly to the commencement point.
(d) An area bounded by a line joining the following MGA points consecutively: 338190E 5421131N, 338280E 5420983N, 338387E 5420963N, 338594E 5420780N, 338681E 5420771N, 338770E 5420712N, 339309E 5420651N, 339342E 5420630N, 339246E 5420524N, 339339E 5420447N, 339249E 5420128N, 339424E 5419943N, 339319E 5419887N, 339141E 5419981N, 338988E

5419836N, 338518E 5419625N, 338522E 5419492N, 338358E 5419282N, 338290E 5419349N, 338306E 5419591N, 338347E 5419779N, 338375E 5419947N, 338518E 5419950N, 338549E 5419857N, 338719E 5419896N, 338806E 5420064N, 338924E 5420275N, 338833E 5420321N, 338900E 5420436N, 339067E 5420393N, 339239E 5420616N, 338753E 5420668N, 338718E 5420582N, 338603E 5420594N, 338480E 5420740N, 338359E 5420676N, 338186E 5420688N, 338106E 5420608N, 338385E 5420581N, 338427E 5420510N, 337805E 5420097N, 337592E 5420261N, 337392E 5420111N, 337459E 5419979N, 337168E 5419824N, 336908E 5419307N, 336805E 5419268N, 336570E 5419565N, 337109E 5419928N, 337070E 5420272N, 337224E 5420485N, 337018E 5421024N, 337126E 5421199N, 337427E 5421045N, 337864E 5421076N, 338105E 5421175N,
then directly to the commencement point.

Assessor's Summary of Significance:
The Tarkine is a beautiful remote part of Tasmania which supports Australia's largest tract of cool temperate rainforest. Landscapes within the Tarkine range from wild windswept beaches through to extensive buttongrass plains with stunning vistas to impressive rainforests. These rainforests are important for their flora which has links to the ancient continent of Gondwana, and for their lichens and fossils which help tell the story of Australia's ancient flora and its evolution. The Tarkine also contains rare magnesite karst systems. Dotted along the wind-swept coastline are the remains of numerous hut depressions found in Aboriginal shell middens. These huts and middens are the remnants of an unusual, specialised and more sedentary Aboriginal way of life which was based on the hunting of seals and land mammals, and the gathering of shellfish.

Draft Values:

Criterion	*Values*	*Rating*
A Events, Processes	The cool temperate rainforests of Tasmania are important as a refuge for flora species with ancient lineages and their contribution to understanding aspects of Australia's evolutionary processes. The Tarkine contains the most extensive and least fragmented areas of cool temperate rainforest in Australia (Jarman et al 1987 p9 and Read 1999 p163) and therefore is important in conserving these values. The cool temperate rainforests of Tasmania are a reduced and derived subset of Australian flora present in the Tertiary (Read and Brown 1996 p172). They are derived in part from families that were present before and during the breakup of Gondwana (Hill 1995a p29) and are defined as forests that are dominated by species of *Nothofagus, Atherosperma, Eucryphia, Athrotaxis, Lagarostrobos, Phyllocladus* or *Diselma* that are capable of regenerating in the absence of large-scale events such as fire (Jarman et al 1999 p145). The cool temperate rainforests within the Tarkine area are significant for our understanding of evolutionary processes. Tasmania's rainforests represent a living example of one of the most primitive vegetation formations on Earth, and those species that remain have demonstrated an extraordinary ability to survive (Hill 1990 p11). Most Tasmanian rainforest tree species can clearly be demonstrated to be from around the mid Tertiary and for *Nothofagus cunninghamii, Eucryphia lucida, Phyllocladus aspleniifolius* and *Athrotaxis selaginoidea* the fossil record of their direct ancestors exceeds 40 million years (Hill 1990 p11). Extant Tasmanian rainforests contain flora from families that were once far	AT

more diverse and widespread than they currently are (Hill 1995a p29). The fossil record shows that the extent of the original Gondwanan flora within Australia was severely reduced in the north by increasing temperatures and cycles of aridity. However, elements of early rainforest flora have survived in Tasmania largely as a result of its more stable cool temperate climate and its isolation through long periods of its history (Hill et al 1999 p43). As a result, the Tasmanian rainforest is one of the best places worldwide where the effect of climatic change on vegetation during the Cenozoic can be considered in such detail (Hill et al 1999 p43).

The fossil flora site at Little Rapid River also provides evidence of the endurance and diversity of the Tasmanian rainforest flora over time. It is one of the most important Tertiary fossil deposits in Australia (Hill 1995b p17) and is of importance for an understanding of Tertiary vegetation history in south-eastern Australia (Hill 1995b p18). The fossils are from about 35 million years ago, a period which saw climatic upheaval in Australia (Hill 1995b p4).

The fossil record provides a remarkable diversity of conifer species that no modern vegetation community approaches (Tasmanian Geodiversity Database 2000). The Little Rapid River fossil site has produced the highest diversity of species of all the Tasmanian Tertiary fossil flora sites with more than 21 species from 14 genera and 4 families having been described (Hill 1995a p26).

During the late Holocene Aboriginal people on the west coast of Tasmania and the southwestern coast of Victoria developed a specialised and more sedentary way of life based on a strikingly low level of coastal fishing and dependence on seals, shellfish and land mammals (Lourandos 1968; Bowdler and Lourandos 1982). This way of life is represented by Aboriginal shell middens which lack the remains of bony fish, but contain 'hut depressions' which sometimes form semi-sedentary villages. Nearby some of these villages are circular pits or stone arrangements located on or near cobble beaches. The Aboriginal community believes that these represent the remnants of seal hunting hides which were strategically placed near seal colonies and were used regularly on a seasonal basis (David Collett pers. comm.; Stockton and Rodgers 1979; Cane 1980: AHDB RNE Place ID 12060).

The Tarkine coast has the greatest number, diversity and density of Aboriginal hut depressions in Australia. The hut depressions together with the middens and seal hunting hides on the Tarkine coast (Legge 1929:325; Pulleine 1929:311-312; Hiatt 1967:191; Jones 1974:133; Bowdler 1974:18-19; Lourandos 1970:Appendix 6; Stockton and Rodgers 1979; Ranson 1980; Stockton 1984b:61; Collett *et al* 1998a and 1998b) are a remarkable expression of the specialised and more sedentary Aboriginal way of life.

B Rarity	The Tarkine contains extensive high-quality wilderness and natural landscape values as well as the largest tract of cool temperate rainforest in Australia. Such largely undisturbed extensive tracts of cool temperate rainforest are extremely rare worldwide, the only other remnants being in New Zealand, Chile, Siberia and western North America (TCFA 2005). The consideration	AT

of wilderness in the Tarkine as a National Heritage value must encompass all of these areas as parts of a whole, as a single wilderness region, as is traditionally done for the Tasmanian Wilderness World Heritage Area.

Lichen data indicate that the forests of the Tarkine are unique in a global context. They are a centre of distribution for many rare or unusual species, including ones that may occur in other parts of the world, but whose Southern Hemisphere, Australian or Tasmanian distributions are confined entirely to the Tarkine area. The callidendrous rainforests are particularly noteworthy for their unusual lichen floras (Kantvilas and Jarman 2006).

The magnesite karst systems near Bowry Creek-Main Rivulet, the Lyons River and the Arthur-Keith Rivers area are thought to be unique in Australia and globally rare (Sharples 1997 p118). According to the TGD (2000), the same three areas make up the best-developed magnesite karst known in Australia.

Within these systems, the areas around Bowry Cave at Bowry Creek, Pendant Cave at Main Rivulet, most of the karst in the Lyons River area, and the pinnacles at Central Creek (a tributary of the Arthur River) are the most significant concentrations of magnesite karst in the area (Houshold 2004 pers. comm.). They are the only areas in Australia where the nature of the surface and underground landforms provide the opportunity to investigate ongoing natural landscape processes related to the solution of magnesium carbonate rock (Houshold 2009 pers. comm.).

E Aesthetic characteristics	The Tarkine has outstanding aesthetic values in the diversity of its landscapes that represent distinctive aesthetic qualities. The dip and strike of the rocks, interspersed with sandy stretches, on the coast of the Tarkine have created an interdigitation of land and sea that is not found extensively on high energy coasts elsewhere in Australia. This interdigitation is represented in many of the photographs of Peter Dombrovskis. It is this pattern that provided the shellfish resource which supported large Tarkiner populations who created the unusually large midden mounds directly inland from the coast.	AT

The extensive plateau covered by callidendrous temperate rainforest on either side of the Pipeline Track provides a rainforest landscape aesthetic lacking elsewhere in Australia. This callidendrous rainforest is highly recognised by the community as the most distinctive attribute of the Tarkine, and images of its ancient moss-draped trees are now iconic.

The Meredith Range is aesthetically distinct in its combination of granite topography with an extensive coverage of buttongrass moorland. These ranges and moorlands create the vast rolling landscapes of the Tarkine, with panoramic views to the coast and inland that emphasise its scale. The diversity of the Tarkine landscape is highly appreciated by artists and strongly realised in their work, and similarly appears in the images of visitors. This combination of landscape elements does not occur elsewhere at this scale.

The combination of coastal, rainforest, and mountainous landscapes creates a meeting of physical characteristics, colours and textures that are appreciated

and represented in photography and professional assessment, while the diverse and largely undisturbed vegetation cover ranging from large scale differences (e.g. buttongrass moor, coastal dune vegetation, rainforest and scrub) to small-scale features including ferns, old-growth trees and coastal plants frequently feature in landscape photography, and other imagery.

The extensive Tarkine rainforest is highly regarded for its wild natural beauty and mystery. It offers peace, solitude and the chance to be embraced by nature. The primaeval qualities and beauty of the Tarkine rainforests have been recognised in Tasmania since the 1860s, initially by naturalists and then increasingly by artists, the local community and conservationists. For contemporary Australians, both wilderness and rainforest have high intrinsic values as well as being symbols of personal replenishment and renewal. The Tarkine has the largest contiguous area of temperate rainforest wilderness in Australia.

The Tarkine has an outstanding representation of long stretches of black reflective rivers flowing deep between rainforest-covered slopes. These rivers are highly depicted by artists, and along with the rainforest, have become a significant signature for the Tarkine. Their aesthetic qualities encourage contemplation, reflection and refreshment of the soul.

The Tarkine coast is a wild and ruggedly beautiful landscape; a place where the experience of being on the edge of a vast ocean and the powerful winds of the Roaring Forties can be experienced. This coastal landscape evokes powerful responses: the clean air, soundscape primarily of nature, pounding waves, eroded rocks, piled sea detritus, large dunes and middens.

The coastline of the west coast is renowned for these qualities, and the Tarkine area contains a long sweep of wilderness coast backed by the Norfolk Range. The coast is much photographed and some images have become a signature for this landscape: for example, Peter Dombrovskis' Coastal Dunes and Wombat Tracks (1992).

The Tarkine rainforests offer outstanding opportunities for contemplation, reflection and refreshment of the human spirit. The qualities of naturalness and the scale of the Tarkine rainforest landscape create a sense of space and a timelessness that is in sharp contrast to contemporary Australian life. These qualities are strongly conveyed in artists' work and public snapshots.

The Tarkine is a dramatic, powerful and awe-inspiring landscape. These qualities arise from its scale and the feeling of wildness. Vastness and wildness together create a powerful sense of the Tarkine as truly natural landscape for contemporary Australians. The weather-lashed coast offers a powerful experience. The scale of the towering trees and the seemingly immeasurable rainforest creates feelings of wonderment, evokes a sense of mystery and the potential for discovery. These attributes are inspirational for artists and conservationists who have brought these qualities to the attention of the wider Australian community through their work. For the communities of the north-west region, the Tarkine is a place apart from the everyday, awe-inspiring for its remoteness and scale.

Historic Themes:

Nominator's Summary of Significance:
Summary of National Heritage Values in the Tarkine

This summary is adapted from Draft Proposal for a Tarkine National Park (in. press)

This proposal is for a National Heritage Area in the Tarkine Wilderness in North-West Tasmania. The proposal covers an area of 447,000 ha. The word 'Tarkine' has been adopted for the region in recognition of the Tarkine (Tar.kine.ner) people who occupied the Sandy Cape region of the Tarkine' Coast for many thousands of years.

The natural and cultural values of the Tarkine are well recognised and include;

- The largest single tract of rainforest in Australia, and the largest Wilderness dominated by rainforest in Australia;

- 190,000 ha of rainforest in total;

- The northern limit of Huon Pine (Lagarostrobus franklinii);

- A high diversity of wet eucalypt (tall) forests including large, contiguous areas of Eucalyptus obliqua;

- A great diversity of other vegetation communities, such as; dry sclerophyll forest and woodland, buttongrass moorland, sandy littoral communities, wetlands, grassland, dry coastal vegetation and sphagnum communities;

- A high diversity of non-vascular plants (mosses, liverworts and lichens) including at least 151 species of liverworts and 92 species of mosses;

- A diverse vertebrate fauna including 28 terrestrial mammals, 111 land and freshwater birds, 11 reptiles, 8 frogs and 13 freshwater fish;

- Over 50 rare, threatened and endangered species of flora and fauna, including the Tasmanian Wedge Tailed Eagle and Giant Freshwater Crayfish;

- A complex and diverse invertebrate fauna, including; at least 16 species found nowhere else, the largest freshwater invertebrate on earth (Astacopsis gouldi) and one of the richest amphipod (a type of small crustacean) fauna diversities in the world;

- Globally unique magnesite karst systems in the Lyons/Keith/Arthur River areas and at Main Rivulet/ Bowry Creek area;

- Excellent examples of joint controlled drainage features (e.g. Huskisson syncline, Meredith Range, Rapid River);

- Significant coastal features such as the Sandy Cape dune field and the Arthur River estuary (probably the best example of a large river estuary in good condition in Tasmania);

- Dolomite karst systems in the Trowutta/Sumac/Black River region;

- Karst landforms in the 'Ahrberg' group (Donaldson and Upper Rapid rivers);

- The largest basalt plateau in Tasmania retaining its original vegetation;

- Other geomorphic features such as the Bulgobac glacial end moraine and fossil sites at Marionoak and Hatfield River;

- Large areas of high quality wilderness centred on the Meredith Range and the Sumac region and three separate areas (Norfolk Range, Mt Bertha/Donaldson River and Savage/Keith River) which actually abut each other, creating a continuous stretch of wilderness covering much of the proposed National Heritage Area;

- Areas of high quality scenic value such as; Australia's largest tract of rainforest, the Meredith Range, the Norfolk Range and the coastline; and

- One of the richest archaeological sites in Tasmania with the diversity and density of Aboriginal sites ranking it among "the world's greatest archaeological sites".

Description:
The Tarkine covers approximately 439 000 ha, an area almost twice the size of the ACT. Much of the area is remote and uninhabited with its remoteness being a significant factor in the area's relatively low level of resource use since European settlement.

The western coastline of the Tarkine is made up of Quaternary dune fields and rocky shores. A number of coastal benches and platforms are considered to record a history of changing sea levels during Tertiary and Quaternary times.

During the late Holocene, the beaches, rocky shores and coastal dune fields of western Tasmania provided the setting for a specialised and semi-sedentary Aboriginal way of life based on a strikingly low level of coastal fishing and a dependence on seals, shellfish and land mammals. Along the coast of the Tarkine, a suite of sites including large and complex middens, stone artefact scatters, hut depressions, stone arrangements and petroglyphs provides evidence for this way of life. Aboriginal people also quarried the spongolite at Rebecca Creek (inland of the coast) to make stone tools. This source of spongolite is the only one of its kind in Tasmania and the stone was traded throughout northwest Tasmania. These cultural heritage values are important to the Tasmanian Aboriginal community.

Inland, the coastal environment gives way to vast areas of coastal heathland and buttongrass plains, and further east to the rugged Norfolk Range and the intricate drainage patterns caused by high rainfall interacting with underlying geology over the millennia. The drainage patterns of the Tarkine have generally been characterised as a trellised pattern which reflects the structural control of the underlying folded rocks. However, many rivers and streams in the area are controlled by jointing and faulting structures, or exhibit branch-like or parallel drainage patterns in areas where structural control is less significant.

The geology of the Tarkine is in many ways a microcosm of Tasmanian geology as a whole, containing features representative of most major stages in the geological development of Tasmania. The oldest rocks in the area are siltstones and quartzites that were deposited on what was once a quiet shallow marine shelf. With the later development of a deep water trough in the eastern half of the area, slaty mudstones and greywacke sandstones were deposited while possibly contemporaneous dolomites and volcanic rocks were deposited in the region of the Arthur Lineament, which may represent both the approximate shoreline at the time and a zone of volcanism. Earth movements then deformed parts of these rock sequences in a narrow zone, forming the metamorphic complex of the Arthur Lineament. The Arthur Lineament contains the most extensive deposits of magnesite karst in Australia. The Tarkine includes the

largest area of basalt soils in Tasmania that still support undisturbed natural vegetation communities.

The varying geology, soil, topographic relief and fire frequency have created a rich tapestry of vegetation types across the Tarkine, but particularly in the east. The temperate rainforest, eucalypt forest and buttongrass moorland occur in a mosaic of Antarctic and Australian floral elements. The Tarkine contains the largest tract of cool temperate rainforest in Australia with approximately 170 000 hectares of land covered in mostly myrtle-dominated forest. Most of this rainforest occurs on relatively fertile land, including on basalt. Rainforest on basalt is unusual in Tasmania and probably in Australia as such fertile soils are usually cleared. Sassafras, leatherwood, celery-top pine and other tree species with ancient lineages share the rainforest with a diversity of non vascular plants. Preliminary studies of lichens and bryophytes have already revealed the presence of new endemic taxa. Two hundred and thirty-nine bryophyte species representing 93 mosses and 146 liverworts have been identified in the area. There is a high diversity of rainforest communities in the Tarkine. These include implicate, thamnic, callidendrous and intermediate rainforests.

The west coast has a wide range of plant communities peculiar to salt marsh, coastal sand dunes and sea bird breeding colonies. These offer specialised niches for rare and restricted endemic plants. Serpentine, limestone and dolomite substrates are also important habitats for restricted endemic plant species.

The area contains approximately 24 mammal species (four species and 13 of the recognised subspecies are endemic to Tasmania), 167 bird species (including 10 of the 12 Tasmanian endemic species), two migratory bird species that breed only in Tasmania and 12 reptile species (including one of Tasmania's six endemic species). In addition, nine of Tasmania's 16 amphibian species have been recorded in the area (three of which are endemic to Tasmania) and 11 species of freshwater fish are found there.

The wet forest invertebrate fauna is diverse. Talitrid amphipods have undergone great adaptive radiation in Tasmanian forests with at least eight species having been recorded in the area. Land snails, flatworms, onychophorans, spiders, centipedes, millipedes, collembola and beetles have been found to be well represented in these environments.

The high annual rainfall experienced in the area helps form diverse aquatic habitats in rivers, coastal lagoons, streams, and estuaries. The freshwater crustaceans are of significance as many groups such as amphipods, isopods and crayfish are relicts of the Gondwanan fauna or remnants from even earlier eras. The Arthur River catchment is the only river system containing the giant freshwater crayfish *Astacopsis gouldi* that does not drain into Bass Strait.

Analysis:

Boundary

The boundary for the Tarkine nomination was based on a national park proposal put forward by conservation groups. It included areas of production forest and plantation and did not include the most significant Indigenous values in the region. Further work has determined a more appropriate boundary for the Tarkine National Heritage area which excludes areas of plantation and areas degraded by past mining activity. Areas with Indigenous significance and rainforest reserves have been added.

The methods used in the analysis include available literature, expert opinion and the following additional resources:

<u>Natural heritage values:</u>

The claimed non-geological natural heritage values were initially investigated using the Australian Natural Heritage Assessment Tool (ANHAT) to determine whether they were significant first at a state level and then within comparative areas of Australia. If through this process, values were found to have some potential as being of outstanding significance to the nation, they were then investigated further

through literature research and discussions with experts where appropriate.

Aesthetic and lower plant values were identified as requiring further investigation and reports were commissioned.

Material produced for the Tasmanian Forests Independent Verification Group process was reviewed.

Indigenous heritage values:
The nominator asserted that the Tarkine meets the criteria for National Heritage listing. Six reasons, phrased within a Tasmanian comparative universe, were provided and although the nominator did not provide any reasons why these attributes have outstanding heritage value in a national context, each has been considered.

Historic heritage values:
The nominator made no specific claims for historic heritage values against the criteria. The historic values of the Tarkine were assessed and were found not to meet the threshold for National Heritage listing.

Criterion A: importance in the course, or pattern of Australia's natural or cultural history.

Natural Values – above threshold

Relict of ancient vegetation
The belief that the cool temperate rainforests of contemporary Tasmania are remnants of Gondwanan forests is misleading (Macphail 1991:45). Modern rainforests, like all vegetation types are a product of changes in the environment (Macphail 1991:45) and the contemporary flora of Tasmania is a product of past climatic and tectonic processes (Hill et al 1999:63). The cool temperate rainforests in Tasmania began developing into their modern forms 10 to 11 million years ago during the Miocene and reached their maximum distribution 7000 to 9000 years ago. Since then there has been an overall retreat in distribution and during this time the floristic composition of cool temperate rainforest has varied considerably (Hill 1991).

That said, Tasmanian rainforests are an important relict of ancient floristic stock (Hill 1990:5). Cool temperate rainforest is derived in part from rainforest families that were present before and during the breakup of Gondwana. Extant Tasmanian rainforest contains flora from families that were once far more diverse and widespread than at present (Hill 1995a:29). This range retraction is reflected in the floristic composition of the contemporary Tasmania rainforest which is comparatively simple and is a reduced and derived subset of flora present in the Tertiary (Read and Brown 1996:172).

Elements of early rainforest flora have survived in Tasmania largely as a result of its more stable cool temperate climate, the presence of mountain refugia and its isolation through long periods of its history. Tasmania is a unique region in which the flora has been isolated for a relatively long period during which it has been subject to major climatic changes. There are few places on Earth where the effect of climatic change on the vegetation on this timescale can be considered in such detail (Hill et al 1999:43).

The Tasmanian cool temperate rainforests represent a living example of one of the most primitive vegetation formations on Earth and those species that remain have demonstrated an extraordinary ability to survive (Hill 1990:11). The fossil record of rainforest species is particularly good, and demonstrates a long and complex history strongly linked with other high latitude Gondwanan landmasses such as South America and Antarctica (Hill et al 1999:63).

The Tarkine has outstanding heritage value to the nation under criterion (a) as a relict of ancient

vegetation and for its demonstration of links with Gondwanan flora.

Little Rapid River fossil flora site:
Tasmania has some of the best-preserved and best-studied Cenozoic (65 million years ago till present) plant fossil sites in the world (Jordan and Hill 1998:2). It contains some of the most important Tertiary fossil deposits in Australia (Hill 1995b:17) and their interpretation is of importance for an understanding of Tertiary vegetation history in south-eastern Australia (Hill 1995b:18).

There are approximately 37 Cenozoic flora fossil sites across Tasmania (Jordan and Hill 1998:ii) and 12 of these were listed in the RNE for palaeontological value. Together, they provide the best record of Cenozoic history in the Southern Hemisphere (Jordan and Hill 1998:3).

Five flora fossil sites in particular (Little Rapid River, Regatta Point, Lea River, Cethana and Monpeelyata) are considered of international significance for research on climate and the history of vegetation (Jordan and Hill 1998:2). These five sites are given an equal and highest rating for 'value' by Jordan and Hill (1998:5). However, the Tasmanian Geoconservation Database (TGD) (2000) rates the Little Rapid River flora fossil site as 'outstanding at an international scale' whilst the other four sites have a TGD ranking of 'outstanding at a national scale'. The Little Rapid River site is the only one of these five sites located within the Tarkine.

The Little Rapid River fossil flora site is one of the most important Tertiary fossil deposits in Australia (Hill 1995b:17). The deposit is the most comprehensively studied of the Tasmanian fossil flora sites, and contains a diverse and extremely significant assemblage of conifers, angiosperms and lower plants. The site has a remarkable diversity of conifer species that no modern vegetation community approaches (TGD 2000).

The palaeontological values of the Little Rapid River fossil flora site are related to the values of the cool temperate rainforest present within the Tarkine. The fossil site represents vegetation assemblages that were present in the area prior to the impact of evolutionary, geological and climatic processes that have resulted in the contemporary rainforest found in the area.

The Tarkine has outstanding heritage value to the nation under criterion (a) as one of the most important Tertiary fossil flora sites in Australia and for the evidence it provides of the evolution of the Australian flora.

<u>Natural Values – below threshold</u>

A high diversity of wet eucalypt forests (nominator's claim):
There is currently no systematic way to assess vegetation community diversity at a continental scale because of variance in definitions and distribution mapping methodologies (National Vegetation Information System). However, the forests of far northern NSW have previously been identified as the major centre for the development and diversity of tall wet eucalypt forests in Australia (EA 1999).

As a result of the lack of comparability of vegetation communities and the absence of clear outstanding significance of the Tarkine over the forests of far northern NSW, **it is unlikely that the place has outstanding significance to the nation under criterion (a) for its diversity of wet eucalypt forests.**

Epacridaceae species richness:
It is unlikely that areas within the nominated place are nationally significant for this value. According to a 2009 ANHAT analysis, Tasmania is clearly the centre for species richness for the Epacridaceae family. Within Tasmania, map sheets in the east of the Tarkine contain the third most species rich area for the Epacridaceae. However, these map sheets also contain the Cradle Mountain region of the Tasmanian

Wilderness WHA and it is likely that this alpine and subalpine region is the reason for the high score rather than the mostly wet forest that is within the Tarkine in those map sheets.

Therefore it is unlikely that the Tarkine has outstanding heritage value to the nation under criterion (a) for the richness of its Epacridaceae.

A diversity of non vascular plants (nominator's claim):
The Tarkine has a high diversity of the major taxa groups for non vascular plants, and good data for lichens and bryophytes is available for Tasmania. A consultant's report found that there is lack of information to provide for a national comparison, and therefore it is not possible at this stage to say that the Tarkine is the most or one of the most significant areas in the country for non vascular plants. The report however indicated that the concentration of rare or unusual species contributes to the natural heritage values of the area and that the callidendrous forests of the Tarkine in particular are unique in a global context, being a centre of distribution for many rare or unusual species of lichen. This is more appropriately considered under criterion (b).

There is not sufficient information to conclude that the Tarkine has outstanding heritage value to the nation under criterion (a) for the diversity of its non-vascular plants.

The northern limit of Huon pine (nominator's claim):
Single species range limits such as this are unlikely to be of outstanding national significance on their own.

The Tarkine does not have outstanding heritage value to the nation under criterion (a) as the northern limit of Huon pine.

Refuge (to date) of un-diseased Tasmanian devil populations (nominator's claim):
It is estimated that the Tasmanian Devil Facial Tumour Disease has now affected populations over 65 percent of Tasmania and has spread as far west as Upper Natone and Surrey Hills (Resonance 2009). At present, no occurrence of the disease has been recorded in the high-density devil population of the northwest area of Tasmania (including the Tarkine). Little is known about the disease or its rate of spread and the disease is still spreading. It remains to be seen whether the disease will reach this population and it is premature to speculate about the significance of the role of the Tarkine as a refuge. The importance of a place as a refuge for a single iconic species is unlikely to meet the threshold for National Heritage listing.

There is insufficient evidence to support the claim that the Tarkine has outstanding heritage value to the nation under criterion (a) for its un-diseased Tasmanian devil population.

A diverse vertebrate fauna (nominator's claim):
The temperate Nothofagus rainforest in Tasmania contains a relatively depauperate vertebrate fauna (Read and Brown 1996:171) and the species are generally wide ranging with low levels of endemism (Read and Brown 1996:171). Many of the significance claims for vertebrates in the Tarkine are true at the regional or state level as the area is a stronghold for fauna and flora that are less common elsewhere in Tasmania. However, it is unlikely that the Tarkine contains values of outstanding national significance for vertebrate diversity for the following reasons:

According to a July 2004 AHAT technical report, 77 natural heritage 'hotspots' have been identified as the regionally richest and most unique terrestrial and freshwater areas in Australia (AHAT 2004a:7 - 11). From this list, only two areas in Tasmania (the Great Lake - Great Western Tiers – Gordon River – Franklin River area and the Derwent map sheet) compare with areas identified on the mainland.

Within the terrestrial environment, AHAT identified two areas in Tasmania as being the most significant for a combination of species richness and endemism (AHAT 2004a:11). They are the Cradle Mountain area and the Derwent map sheet. By comparison, over 70 places on mainland Australia were identified as being of significance using the same methodology.

Therefore it is unlikely that the Tarkine has outstanding heritage value to the nation under criterion (a) for the diversity of its vertebrate fauna.

A complex and diverse invertebrate fauna (nominator's claim):
The Tarkine is traditionally a poorly understood area in terms of freshwater invertebrates (Richardson and Serov 1992:313). Furthermore, the July 2004 AHAT technical paper notes there is more data bias for both Tasmania and Victoria than is present in other areas of Australia. The two areas in Tasmania that were highlighted as being potentially nationally significant are the Ansons River region in the northeast and the Great Lake region and surrounding plateau.

Within the terrestrial environment an AHAT analysis has identified two areas in Tasmania as being the most significant for a combination of species richness and endemism for indicator invertebrate taxa such as land snails and butterflies (AHAT 2004a:11). They are the Cradle Mountain Area and the Derwent 1:100 000 map sheet. Over 70 regions on mainland Australia were identified as being of similar significance.

The presence of 16 endemic species alone does not signify the area is nationally significant for invertebrate endemism. The Dalhousie Springs complex in SA, which is far smaller than the Tarkine in both in size and habitat diversity, contains approximately 11 endemic species of invertebrates and four endemic fish species (NHL 2009).

Another claimed value of the Tarkine is the presence of the largest freshwater invertebrate on earth, *Astacopsis gouldi*. The presence of one species however is not likely to be nationally significant.

The Tarkine is unlikely to have outstanding heritage value to the nation under criterion (a) for the complexity and diversity of its invertebrate fauna.

One of the richest amphipod diversities in the world (nominator's claim):
According to both Dr Jim Lowry of the Australian Museum and Dr Tony Friend of CALM (WA), both Tasmania and New Zealand are considered worldwide centres for amphipod species richness (Jim Lowry and Tony Friend 2004 pers. comm.). Dr Lowry thinks that the Tarkine area would be more significant for terrestrial rather than freshwater species. Dr Alistair Richardson of the University of Tasmania considered the claim of significance to be a reasonable one. However, he also thought that based on current information, it would be hard to justify the diversity of land amphipods as a special feature of the Tarkine (Alistair Richardson 2004 pers. comm.). The significance of the Tarkine for amphipod richness cannot be comprehensively determined on currently available information and outstanding value to the nation under criterion (a) cannot be proven.

Significant coastal features such as Sandy Cape dune field and the Arthur River estuary (nominator's claim):
The Tasmanian Geoconservation Database (TGD) (2000) ranks the Sandy Cape dune fields as outstanding at the state level along with other dune systems such as those at Lavinia Point on King Island. At a national level, extensive transgressive dune systems also occur along the Queensland coast, at Shelburne Bay on Cape York, Ramsay Bay on Hinchinbrook Island, Cape Bedford, North Stradbroke Island and Moreton Island with the least modified and most extensive system being in the Fraser Island / Cooloola region (Bird 2004:9). The scale and variety of the Fraser Island / Cooloola system is seen nowhere else in Australia (Bird 2004:12) and the only dune system in Tasmania considered a 'major

coastal dune system' is at Cape Portland in the state's northeast (Bird 2004:13).

The TGD (2000) ranks the Arthur River estuary as being outstanding at the state level. The number of invertebrate and fish species associated with river estuaries in western Tasmania is low compared to river estuaries on the north and east coasts (Edgar et al 1999:1186). The highest numbers of species occur in estuaries in the Furneaux Group of islands, north eastern and south eastern Tasmania (Edgar et al 1999:1169).

The coastal features of the Tarkine do not have outstanding heritage value to the nation under criterion (a).

Dolomite and limestone karst systems (nominator's claim):
The dolomite karst systems within Tasmania are not the most significant when compared to the vast areas of buried dolomite in the Barkly Tablelands (Yeates 2001). The beds of dolomite near Camooweal have the greatest concentration of karst features with about 30 caves (Webb et al 2003:22). Within Tasmania, other areas of dolomite karst such as the Hastings show cave south of Hobart, and the Mount Anne area (Webb et al 2003:18) are as significant as the karst in the Trowutta / Sumac / Black River karst area (TGD 2000).

The known limestone karst areas within the Tarkine are minor compared to the extensive development of karst in limestone in other areas in Tasmania (Sharples 1997:ix). The area has no karst landform features that are not better developed on limestone elsewhere in Tasmania (Williams 1998:1).

The dolomite and limestone karst systems of the Tarkine do not have outstanding heritage value to the nation under criterion (a).

The largest basalt plateau in Tasmania retaining its original vegetation (nominator's claim):
This nominated value indicates value only in a Tasmanian context. According to the TGD (2000) the plateau is of only state significance.

It is unlikely to have outstanding heritage value to the nation under criterion (a).

Bulgobac glacial end moraine (nominator's claim):
The TGD (2000) ranks the Bulgobac glacial end moraine as being only representative at a state level.
The Bulgobac glacial end moraine does not have outstanding heritage value to the nation under criterion (a).

Marionoak and Hatfield River fossil flora site (nominator's claim):
Marionoak fossil flora site is one of a suite of fossil flora sites in Tasmania considered to have 'outstanding heritage significance' (RNE records). However it is not one of the top five fossil flora sites in Tasmania (Jordan and Hill 1998:2) and the TGD (2000) rates it as being only outstanding at a state level.

Hatfield River fossil flora site is of medium conservation value (Jordan and Hill 1998:48). The flora is poorly known at present, but appears to be a depauperate version of the flora at Little Rapid River, Lea River and Cethana (Jordan and Hill 1998:48). The site has yielded fossils similar to those of the Lea River locality but is less rich and less well studied (TGD 2000 and Jordan and Hill 1998:48) The TGD (2000) rates the site as being representative at a state level.

Therefore it is unlikely that these fossil flora sites are of outstanding significance to the nation under criterion (a).

Indigenous heritage values – above threshold

Specialised way of life:

While not claimed by the nominator, the Tarkine contains a suite of specialised coastal sites on the west coast that include large and complex multi layered shell middens containing well preserved depressions which are the remains of dome-shaped Aboriginal huts. These sites represent the best evidence of an Aboriginal economic adaptation which included the development of a semi-sedentary way of life with people moving seasonally up and down the north west coast of Tasmania. This way of life began approximately 1 900 years ago and lasted until the 1830s (Jones 1978:25).

From the late 1960s through to the 1980s, archaeological research demonstrated that the coasts of western Tasmania and southwest Victoria were areas where a specialised and more sedentary Aboriginal way of life developed during the late Holocene. The semi-sedentary Aboriginal way of life was based on a strikingly low level of coastal fishing and a dependence on seals, shellfish and land mammals of the region (Lourandos 1968; Bowdler and Lourandos 1982). Both these areas have ethnographic evidence that documents the presence of Aboriginal huts in the early 1830s (Plomley 1966; 1991, Mitchell 1988:14). The ethnographic records also reveal that huts were not only commonly found in coastal environments, but also found inland (Bowdler and Lourandos 1982:126; Plomley 1966 and 1991; Hiatt 1968b:191).

Seal Point, located on the Cape Otway coastline in southwest Victoria, is the only known published record of Aboriginal hut depressions on the mainland (Lourandos 1968). The midden at Seal Point contains the remains of 13 circular hut depressions clustered on a hillock with another set approximately 200m west (Mitchell 1988:13). The depressions themselves were approximately 2 metres in diameter and 20 centimetres in depth and date from about 1 450 years ago up until the 1830s (Lourandos 1968:85; Mitchell 1988:13).

Unlike southwest Victoria, the west coast of Tasmania has no less than 40 hut depression sites exhibiting considerable diversity in the number of hut depressions at each site (Jones 1947:133; Bowdler 1974:18-19; Legge 1929:325; Lourandos 1970:Appendix 6; Pulleine 1929:311-312; Ranson 1980; Collett et al 1998a and 1998b; Prince 1990 and 1992; Caleb Pedder pers. comm.) as well as inland (Hiatt 1967:191; Stockton 1984b:61).

The Tarkine area has the highest density of known hut sites on the west coast with just under half of the recorded sites occurring between the Pieman River and West Point. This includes West Point (five sets of depressions including a village of nine huts and three single huts), Rebecca Creek (village of eight huts), Pollys Bay North (village of seven huts with one outlier to the south), Bluff Hill Point (at least one hut), Couta Rocks (two huts), Ordnance Point (three huts), Nettley Bay (one hut), Brooks Creek (village of nine huts), Temma (village of three huts), Gannet point (village of seven huts), Mainwaring River (at least one hut), Sundown Point (one hut) (Legge 1928; Reber 1965; Lourandos 1968; Stockton 1971; Jones 1974; Ranson 1978; Ranson 1980; Stockton 1982; Stockton 1984a; Stockton 1984b; Collett et al 1998a; Collett et al 1998b). This diversity is greater than is found in southwest Victoria where only one site with hut depressions has been identified (Lourandos 1968).

A group of shell middens at West Point (at the northern end of the Tarkine) includes the best examples of these large, complex shell middens which contain the remains of 100s of seals, 10 000s of shellfish and to a lesser extent terrestrial mammals which were hunted in the hinterland just behind the foredunes. The main West Point shell midden is exceptional in terms of its size, measuring 90 metres long, 40 metres wide and 2.7 metres deep. It is densely packed with shells and animal bones with its total volume being

estimated at 1 500 m3 (Jones 1981:7/88). The midden is some six metres above the general lay of the land giving a commanding all round view of the coast and surrounding hinterland (Jones 1981:7/88). At its highest point there is a cluster of nine hut depressions in the upper portion of the midden which date to less than 1 330±80 years BP (Jones 1971:609 in Stockton 1984a:9, 28). The depressions are circular, measuring approximately four metres in diameter and half a meter in depth (Jones 1981:7/88).

Based upon the analysis of the excavated archaeological remains from a hut depression at West Point, Jones concluded that the hut depressions were the remnants of a semi-sedentary 'village' (Jones 1981:7/88-9). The village was established approximately 1 900 years ago next to an elephant seal (*Mirounga leonina*) colony located on the varied littoral rocky embayments below the midden (Jones 1981:7/88). Based upon the large number of seal bones found in the midden, the elephant seals were a rich resource and a major component of the Aboriginal people's diet in terms of gross energy (65% of the calories) (Jones 1981:7/88). The midden surrounding the hut depression at Sundown Point also contained a substantial number of fur seal bones (Stockton 1982:135). The Aboriginal community believes that the depressions in cobble banks were used as seal hunting hides (David Collett pers. comm.). Often these hunting hides are located in cobble beaches near seal colonies such as those at West Point and Bluff Hill Point (Stockton and Rodgers 1979; Cane 1980; AHBD RNE Place ID 12060).

Analysis of the faunal remains from the West Point midden indicates that mainly young calves were killed; indicating that between 1 900 and 1 300 years ago Aboriginal people inhabited the area in summer when young seals are being weaned. Calculations of the food energy derived from the quantity of shell and bone remains, 40 Aboriginal people could have inhabited the huts permanently, spending up to four months of every year for 500 years at West Point midden (Jones 1981:7/88-9). Sometime after 1 300 years ago the archaeological evidence indicates that the West Point midden was no longer used by Aboriginal people as they moved away from hunting seals (Jones 1981:7/88). Huts, however, continued to be built and used elsewhere in the Tarkine with a focus on gathering shellfish and the hunting of fur seals (Ranson 1978:156; Stockton 1982:135).

The extensive suite of shell middens along the north west coast reflect the specialised way of life developed by Aboriginal people in the late Holocene as they travelled up and down the coastline hunting seals, other land mammals and gathering shellfish. In particular, the apparent absence of fish bones, the presence of marine and terrestrial animal bones in some middens, when taken in conjunction with the hut sites, are an important expression of this specialised way of life.

The suite of Aboriginal shell middens, hut depressions sites and seal hunting hides in the Tarkine best represent a specialised and more sedentary Aboriginal way of life that developed on the coasts of west Tasmania and southwest Victoria during the late Holocene, based on a strikingly low level of coastal fishing and dependence on seals, shellfish and land mammals.

Therefore the Tarkine has outstanding heritage value to the nation under criterion (a).

<u>Indigenous heritage values – below threshold</u>

Density and diversity of sites:
The nominator claims that the Tarkine is one of the richest archaeological sites in Tasmania with the diversity and density of sites ranking it among 'the world's greatest archaeological sites'. In addition, the nominator claims that the area contains at least 244 recorded Aboriginal sites including middens, hut depressions and petroglyphs.

The nominator provides no evidence to support this claim. A comparison within Tasmania shows that the Tarkine area appears to have a greater diversity of site types than the south coast and the Port Davey area in southwest Tasmania. The area contains rockshelters, stone quarries, surface scatters of stone artefacts,

petroglyphs, stone arrangements and an immense variety of shell middens some of which are large and complex (Lourandos and Bowdler 1982; Stockton 1982; Stockton and Rodgers 1979; Cosgrove 1983; Jones 1980; Collett et al 1998). The south coast of Tasmania contains similar site types to those found on the west coast (with the exception of stone arrangements), however the sites on the north west coast are found in a higher density and have better preserved examples of the various archaeological site types.

There are other areas in Australia with a similar diversity and density of archaeological sites. For example, Mulvaney and Kamminga (1999:284-5) state that the Sydney Basin is one of the richest areas in Australia containing many thousands of Aboriginal sites including rockshelters, art sites, stone quarries, artefact scatters and hundreds of shell middens along the coast.

The Tarkine does not have outstanding heritage value to the nation under criterion (a) for the density and diversity of Aboriginal archaeological sites.

Density of sites in the inland zone:
The nominator claims there is an exceptionally high density of Aboriginal sites in the inland zone (including a highly significant spongolite quarry at Rebecca Creek) compared to other non-coastal areas of Tasmania.

No evidence is provided to support this claim except for the evidence from the Rebecca Creek spongolite quarry. The 2002 Arthur Pieman Conservation Management Plan focuses on the richness of the Aboriginal heritage in the coastal zone and makes no mention of richness of sites in the inland zone (Parks and Wildlife Service 2002:17)

The Rebecca Creek quarry is the only known source of spongolite in Tasmania and the distribution of spongolite stone artefacts in the archaeological record therefore provides information on Aboriginal trading networks and social interactions between clans during the late Holocene. Artefacts made from the spongolite have been recovered from the Rocky Cape (north west coast) and the Warragarra rockshelter (north central) demonstrating a period of expanding trade beginning 3 000 years ago, which may be related to population expansion at this time in the area (Cosgrove 1990:45).

In a national context, the movement of spongolite from Rebecca Creek over distances of at least 135 km is much less than the distance travelled by material sourced from Mount William in Victoria (AHDB 105936) where McBryde (1984) found evidence that greenstone axes were traded as far as 800 kilometres from the quarry.

Hiscock and Mitchell (1993) and Jones and White (1988) describe the methods used elsewhere in Australia to quarry stone for the manufacture of tools. The available evidence from the Rebecca Creek quarry (Cosgrove 1990) does not indicate there is anything unusual about the process used to quarry stone for tool manufacture.

The Tarkine does not have outstanding heritage value to the nation under criterion (a) for the density of Aboriginal archaeological sites in the inland zone.

Ceremonial Stone arrangements:
The nominator claims that the area contains five of Tasmania's 20 recorded ceremonial stone arrangements and 'Probably the most spectacular example of 'pebble pathways' in Tasmania'.

The nominator provides no evidence to support this claim. An examination of the published literature, including work by Richards and Sutherland-Richards (1992) indicates there are two recorded stone arrangements on the west coast of Tasmania. TASI 4903 is a simple stone arrangement and linear midden with an area of 1020 m2 situated at the southwest end of the Koonya Inlet (Richards and Sutherland-

Richards 1992:63). There is a much larger and different type of stone arrangement at Bluff Hill Point. This stone arrangement is comprised of a series of depressions in a cobble bank with low dry-stone walls and passages leading to the depressions (Stockton and Rogers 1979).

Linear stone arrangements (Jones 1965) and depressions in cobble banks (Flood 1990:332) have also been recorded at the Bay of Fires on the east coast of Tasmania. There are no obvious features that make the stone arrangements located along the Tarkine coast more important than those in the Bay of Fires.

There are other examples of complex stone arrangements in Australia. The Dampier Archipelago in Western Australia contains a large density of standing stones, stone pits and circular stone arrangements, and the diversity of these stone features across the Dampier Archipelago is rare at the national level (AHDB 105726).

The Tarkine does not have outstanding heritage value to the nation under criterion (a) for its ceremonial stone arrangements.

Rock-art sites:
The nominator claims the area contains 'At least 4 of the 11 recorded rock art sites in Tasmania'.

The nominator does not provide any reasons why this number of rock-art sites might make the place of outstanding heritage value to the nation. Recorded rock-art in Tasmania can be divided into two broad categories: paintings and petroglyphs. While the geometric style of these petroglyphs is similar to the Pleistocene Panaramittee tradition, it is possible that in Tasmania this style dates to the late Holocene (Flood 1983:208).

There are five recorded Aboriginal petroglyph sites on the west coast of Tasmania (Cosgrove 1983:35, 44). Three of these sites are within the Tarkine: Sundown Point, Greenes Creek and the Interview River art sites (Stockton 1977; Cosgrove 1983). Greenes Creek and the Interview River sites have a restricted range and limited number of motifs (Flood 1990:343; Stockton 1977; Cosgrove 1983). While there is a greater range of motifs at Sundown Point, the most extensive and diverse range of engraved motifs occurs at Preminghana (Mount Cameron West), which lies outside the Tarkine to the north (Flood 1990). Other petroglyph sites in Australia, such as the Dampier Archipelago (AHDB 105726) in Western Australia, contain a much broader range of motifs, including human figures and animal representations, than the Tasmanian sites. It is likely that the rock-art sites in the Tarkine are of state significance; however the available evidence does not support their significance at a national level.

The rock-art in the Tarkine does not have outstanding heritage value to the nation under criterion (a).

<u>Historic heritage values - below threshold</u>

The Tarkine plays an important role in Tasmania's cultural history. It was the scene of extensive mining activity from the 1870s, involving the extraction of gold, copper, tin, lead, silver and osmiridium in particular. Nevertheless, in comparison with other parts of Australia, the Tarkine mines were not especially early or large. For example, more extensive mining operations were undertaken at Moonta (SA, 1861), Ballarat (VIC, 1851), Broken Hill (NSW, 1875), and Charters Towers (QLD, 1890). The notable exception is the Mount Bischoff mine at Waratah. This became the world's largest tin mine and only the second in Australia to pay dividends of more than one million pounds. However, this mine is just outside the boundary of the Tarkine. Osmiridium mining is unique to Tasmania and the Bald Hill mine near Luina was for a period the state's major provider at a time (1920s) when Tasmania became the world's largest producer of osmiridium. This mine was however eclipsed in 1924 by the osmiridium mine at Adamsfield in Tasmania's southwest, outside the Tarkine. The history of timber harvesting is significant

for Tasmania, but matched by other areas which were opened up for exploitation earlier and at a greater scale. The cattle industry of the Tarkine – while significant at a regional level - was and remains relatively small-scale in comparison with the industry of regional NSW, Queensland and Western Australia.

The Tarkine is unlikely to have National Heritage values against criterion (a) for its historic heritage.

Criterion B: Possession of uncommon, rare or endangered aspects of Australia's natural or cultural history.

Natural heritage values – above threshold

The largest single tract of rainforest in Australia (nominator's claim):

Although the Tarkine does not contain Australia's largest tract of rainforest (which is the tropical rainforest located mostly within the Wet Tropics of Queensland World Heritage Area (Hugall et al 2002:6112)), it does contain the largest tract of cool temperate rainforest with a low level of disturbance and therefore is of outstanding national significance for its biogeographical importance to Australians.

Cool temperate rainforest is uncommon worldwide, with remnants in Australia, New Zealand, Chile, Siberia and western North America. Tasmania's cool temperate rainforest represents the best-developed and most floristically complex form of this vegetation association in Australia, and the most extensive occurrences of it are in the northwest of the state (Jarman et al 1987:9 and Read 1999:163). The cool temperate rainforest within the Tarkine has a high level of connectivity, and creates a large tract of rainforest. In contrast, the rainforest in the south and southwest of Tasmania is less continuous and often occurs in a mosaic with eucalypt forest and woodland, scrub, heath and buttongrass moorland. Although cool temperate rainforest also occurs in Victoria and New South Wales, its distribution there is fragmented and mostly confined to gullies or cloud forest (Jarman et al 1999:145).

The Tarkine has outstanding heritage value to the nation under criterion (b) as the single largest tract of cool temperate rainforest in Australia.

The largest Wilderness dominated by rainforest in Australia; Large areas of high quality wilderness which actually abut each other, creating a continuous stretch of wilderness covering much of the proposed NH area (nominator's claims):

There are various types of wilderness in Australia, the most common and extensive categories being those found in arid and semi-arid environments. Rainforest wilderness is extremely unusual and comprises only a very small percentage of all Australian wilderness. Tropical and sub-tropical rainforest wilderness in Queensland and New South Wales comprises the majority of rainforest wilderness, with small occurrences of warm temperate rainforest occurring in wilderness in eastern New South Wales, East Gippsland and south-eastern Queensland. These occurrences are themselves only a small proportion of the wilderness areas within which they occur.

In Australia cool temperate rainforest occurs in wilderness only in Tasmania. It occurs in scattered localities throughout the Tasmanian Wilderness World Heritage Area (with the largest areas being in the Lower Gordon River region), in smaller wilderness areas in western Tasmania such as the Henty River, Little Henty and Mt Heemskirk wilderness areas (as delineated during the 1996-97 RFA process), with the largest occurrences being in the Tarkine region, primarily the Savage River and Donaldson River wilderness areas, but also occurring in the Meredith and Sumac wilderness areas. Cool temperate rainforest in the Lower Gordon is much more fragmented and dispersed than, and only about one third the total extent of, rainforest in wilderness in the Tarkine (Tasmanian RFA Map S&E 4.1, Forest Resource

Types, and map S&E 4.5, Special Species Timbers). Elsewhere in the Tasmanian Wilderness World Heritage Area, rainforest is even more fragmented and dispersed than in the Lower Gordon. Hence the Savage and Donaldson River areas constitute the largest temperate rainforest wilderness area in Australia, by a significant margin.

The Tasmanian Resource Planning and Development Commission (RPDC 1998:8) has noted that the rainforest in the Donaldson and Savage River areas was assessed during the RFA by the World Heritage Expert Panel 'as being of high wilderness quality and of global significance.'

The National Wilderness Inventory (NWI) is currently the only means of identifying wilderness at a national scale. The areas of the inventory covered by the Regional Forest Agreements were progressively updated between 1995 and 2000. Northbarker ecosystem services (2010) updated wilderness mapping in the Tarkine region as part of studies associated with the proposed Tarkine Road. The Northbarker assessment found that, while wilderness quality in some small areas has been reduced, the wilderness quality is largely unchanged since the RFA wilderness assessment.

The index used in the NWI does not use vegetation communities as a criterion for inclusion or delineation, so direct comparison of rainforest areas is difficult. The Wet Tropics, Cape York, the Tarkine, and areas around the NSW and QLD border represent the larger areas of rainforest associated with wilderness values. Based on currently available information, the Tarkine is one of, but not the largest area of, rainforest associated with wilderness in Australia, however it is the largest area of cool temperate rainforest wilderness.

The Tarkine region is distinctive for the variety of types of wilderness within a relatively small region, including rainforest on basalt derived soils, and the close association of those wilderness areas with each other. Rainforest is infrequently found on basalt derived soils as they have largely been cleared for agriculture. The Tarkine region is an aggregate of five major wilderness areas and a number of smaller areas of high wilderness quality. In most cases these wilderness areas are separated only by a single non-conforming influence, such as a vehicle track or road, rather than being isolated remnants separated by large tracts of cleared or settled land and associated structures as occurs in eastern Tasmania. The consideration of wilderness in the Tarkine as a National Heritage value must encompass all of these areas as parts of a whole, as a single wilderness region, as is traditionally done for the Tasmanian Wilderness World Heritage Area, which is made up of three major wilderness areas spanned by five major wilderness zones, plus a number of smaller wilderness zones and areas of high wilderness quality.

The total area of wilderness in the Tasmanian Wilderness World Heritage Area is larger than that in the Tarkine and it meets the world heritage threshold for wilderness, although the area of wilderness in the Tarkine is smaller, because it is still substantial and contains highly significant rainforest wilderness **it is likely that the Tarkine has outstanding heritage value to the nation under criterion (b) for its high wilderness quality.**

Lichens

The lichen data indicate that the forests of the Tarkine are unique in a global context. They are a centre of distribution for many rare or unusual species, including ones that may occur in other parts of the world, but whose Southern Hemisphere, Australian or Tasmanian distributions are confined entirely to the Tarkine area. The callidendrous rainforests are particularly noteworthy for their unusual lichen floras. With a concentration of rare or unusual species, non-vascular plants contribute significantly to the natural heritage values of the area. (Kantvilas and Jarman 2006).

It is likely that the Tarkine has outstanding heritage value to the nation under criterion (b) for its lichens.

Globally unique magnesite karst (nominator's claim):
This claim was assessed using pre-existing comparative resources such as the Tasmanian Geoconservation Database (TGD 2000) and the Yeates (2001) consultancy report as well as a literature search. The known significance of the karst within the Tarkine resides primarily in its development in magnesite (Sharples 1997:118 and Sharples 1997:ix).

Magnesite deposits of the size found in northwest Tasmania are uncommon on an international scale, and very few deposits remain in such essentially natural condition (Houshold et al 1999:i). Significant karst features are not known in the other known magnesite occurrences in Australia (Sharples 1997:68) and magnesite karst has rarely been recorded anywhere in the world (Sharples 1997:1). Therefore the magnesite karst systems within the Tarkine are considered of international significance for their size and rarity (Williams 1998:1).

Karst landforms in magnesite are rare because of the relative scarcity of large deposits. Limestone and dolomite are the most common karst substrates in Australia and magnesite is a far less common variety of carbonate rock. The other major reason for the rarity of magnesite karst is the lower solubility of magnesite when compared to limestone and dolomite (Sharples 1996:41) coupled with a lack of suitable conditions to allow ongoing solution (Houshold et al 1999:i). The high rainfall in the Tarkine has contributed to its value in the development of magnesite karst.

In Australia, extensive deposits of magnesite occur in South Australia, Queensland and Tasmania (in order of size of Economic Demonstrated Resources). The Queensland deposit is surficial and contains no karst. Only the larger sedimentary and metamorphic deposits have the size and structure necessary to support karst. The South Australian deposit is a massive crystalline deposit, similar to that in the Arthur Metamorphic complex in the Tarkine, but with very limited karst development. While it has more economically viable magnesite it does not have a larger amount of magnesite per se. Magnesite also outcrops at Rum Jungle in suitable rocks but there is no record of karst in those deposits and due to the limited outcrop and relief major surface accessible caves are considered unlikely to be found (Houshold et al 1999). Several areas of magnesite occur within the Arthur Metamorphic complex that contains a 10 km wide linear belt (the Arthur Lineament (Sharples 1997:70)) of strongly metamorphosed and deformed Precambrian rocks trending southwest. Though the occurrence of magnesite in Tasmania is important, a deposit of one type of rock or mineral is unlikely to meet the threshold for National Heritage Listing.

The magnesite karst systems near Main Rivulet, the Lyons River and the Arthur-Keith Rivers area are thought to be unique in Australia and globally rare (Sharples 1997:118). According to the TGD (2000), the same three areas make up the best-developed magnesite karst known in Australia. Within these systems, the areas around Bowry Cave at Bowry Creek, most of the karst in the Lyons River area, the pinnacles at Central Creek and the cave at Main Rivulet are the most significant concentrations of magnesite karst in the area (Houshold 2004 pers. comm.).

It is likely that the Tarkine has outstanding heritage value to the nation under criterion (b) for its magnesite karst.

<u>Natural heritage values – below threshold</u>

A great diversity of vegetation communities (nominator's claim):
There is currently no systematic way to assess vegetation community diversity at a continental scale because of variance in definitions and distribution mapping methodologies. In addition, nominating a high level of plant community diversity as a heritage value is meaningless unless it is placed into context regarding the size of the nomination area as well as the variability in geology, climate, fire history etc that is found within it. Supporting a diverse collection of vegetation communities is a claim that could be

made for many large areas of Australia that possess geological, land use, climatic and other factors that enable a diversity of vegetation types to grow. As a result of the lack of comparability of vegetation communities and the absence of clear outstanding significance of the Tarkine over other large natural areas of comparable size, **it is unlikely that the place has outstanding significance to the nation under criterion (b) for the diversity of its vegetation communities.**

Over 50 rare, threatened and endangered species of flora and fauna (nominator's claim):
The nominator claims that 50 rare, threatened and endangered species including species listed under Tasmanian threatened species legislation are found in the Tarkine. Threatened species at the state level are unlikely to be significant on a national scale.

An ANHAT report was run to determine what EPBC listed species have been recorded within the Tarkine. In total 17 extant species considered nationally threatened are found within the Tarkine, including two species of endangered parrot and eight species of Endangered or Vulnerable orchid. Separate ANHAT analyses were run to determine the comparative significance of the Tarkine within Tasmania and across Australia for nationally threatened orchids. Although Tasmania does contain a significant concentration of nationally threatened orchids, the east coast region has a higher concentration than the Tarkine and therefore it is unlikely that the Tarkine is outstanding for this value.

It is unlikely that the Tarkine has outstanding significance to the nation under criterion (b) for threatened species.

Historic Heritage values – below threshold

Osmiridium mining in Australia is unique to Tasmania and unusual in the world context. Nevertheless, the Tarkine does not possess all Tasmania's osmiridium mining sites. The last and possibly most significant mine was at Adamsfield in the state's southwest.

Coastal droving is unusual but not unique for Australia. In the nineteenth century this activity was carried out in at least one other state (WA, from Dongara to Fremantle).

The Tarkine is unlikely to have National Heritage values against criterion (b) for the rarity of its historic heritage.

Criterion C: Potential to yield information that will contribute to an understanding of Australia's natural or cultural history

Historic heritage values – below threshold
The Tarkine contains sites and remains of the grazing, timber and mining industries. Although some fabric has been compromised through bush fires, natural degradation and fossicking (including for the Zeehan museum collection), it can be anticipated that given the isolation of the area other sites remain relatively undisturbed. These may have the potential to reveal archaeological, engineering and architectural information of historical importance to the region and perhaps Tasmania. On a broad scale however, the evidence does not obviously contribute new information that cannot be obtained from similar sites elsewhere in Tasmania and Australia more generally.

The Tarkine is unlikely to have National Heritage values against criterion (c) for its historic heritage.

Criterion D: Demonstrating the principle characteristics of a class of Australia's natural or cultural places; or a class of Australia's natural or cultural environments.

Natural heritage values - below threshold
Excellent examples of joint controlled drainage features (nominator's claim):
The TGD (2000) ranks these features as having outstanding state significance. **Therefore, it is unlikely that they are of outstanding national significance under criterion (d).**

Historic heritage values – below threshold
The Tarkine has historic places and environments that relate to grazing, timber harvesting and mining. Without onsite investigation and an associated comparative analysis, it cannot be ascertained for certain whether these places and landscapes possess the principal characteristics of a class of place or environment that is not better represented elsewhere in Australia. Nevertheless, this does seem unlikely in a general sense. For example, the Tarkine mining landscape is represented by remnant tracks, tram and railways, buildings, plant, and shafts and adits, of varying degrees of integrity. Similar evidence is present at historic mining landscapes in other parts of Australia, often in situations where conservation, restoration and interpretation have been undertaken. A well-known example is the Burra mining landscape of South Australia.

The Tarkine is unlikely to have National Heritage values against criterion (d) for its historic heritage.

Criterion E: Demonstrating the place's importance in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Natural heritage values – above threshold

Areas of high quality scenic values such as Australia's largest tract of rainforest, the Meredith Range, the Norfolk Range and the coastline (nominator's claim).

To meet the threshold for Criterion E there must be clear evidence that one or more identifiable communities value particular aesthetic characteristics in relation to the place and that the place is valued strongly by that community or communities.

Context (2012) found that much of the Tarkine is strongly valued by:
- the north-west regional community;
- artists;
- conservationists; and
- the general Australian community.

The Tarkine is important to both local communities and communities which extend beyond the region. Conservation campaigns defending wilderness areas in Tasmania, and particularly the Tarkine, are significantly associated with the national story of conservation action to protect wilderness and rainforest areas.

In relation to the north-west regional community the main evidence relates only to a part of the Tarkine, that is the Arthur Pieman Conservation Area. However, conservation debates about the Tarkine are known to have generated considerable support (as well as opposition) across the region. The Tarkine National Coalition, one of the key advocates for the Tarkine, is based in the north-west, and local tourism organisations have engaged widely with their regional communities in developing the branding for the Tarkine. Context concluded that the Tarkine is strongly valued by this regional community for its aesthetic and other heritage values. The Arthur Pieman Social Values study identified the valued aesthetic qualities as closely connected to its wild, remote and unique character, being relatively untouched. Tourism branding of the Tarkine focuses on 'powerful connections with wild places'.

Naturalness and wilderness are fundamental to conservation groups' advocacy for the protection of the Tarkine and expressions of these values which, though often framed in scientific terms, also reflect emotional responses to a wild, pristine and nature dominated place. The Tarkine is also of symbolic importance as a place where conservation battles have occurred on the national and local stage. Evidence about the value of the Tarkine to conservationists as a community has been derived primarily from advocacy documents and websites. Many of the advocates are nationally-focused organisations, indicating that these values are widely shared across a national conservation community.

While the area was first recommended for conservation, as a sanctuary for the Tasmanian Tiger, in 1937 and in 1967 the Circular Head Council commenced the preparation of a case to have the Norfolk Range area dedicated as a national park, it was in the mid 1980s, with the proposed 'Road to Nowhere' that the Tarkine gained prominence for conservationists Australia-wide. Since then a number of proposals for its conservation and heritage listing, as well as development proposals, have stimulated responses from conservation organisations citing aesthetic values among others.

The assessment of the aesthetic value of the Tarkine to Australians as a community relied on a combination of data sources, some derived from direct experience of the place and others from the opportunity to vicariously experience the place through images, film, websites and the like. Underpinning this data are Australian's strongly held values about wilderness, their attraction to Tasmania for its wilderness areas, and the connection between these broader perceptions and a limited amount of Tarkine-specific perceptions research by Forestry Tasmania in 2006. This was complemented by tourism planning studies and interviews. Remote and wild places will always require an assessment of the vicariously held values as many people do not or cannot even imagine visiting these places, and yet they hold them in high regard.

Research since the mid 1970s has established that Australians value wilderness areas. A report commissioned by the Australian Heritage Commission in 1996 established that wilderness areas can be a great source of inspiration for 92% of the population and that 86% believe that wilderness areas should be conserved for their own sake. The Tarkine has high wilderness quality, established through the National Wilderness Inventory, that is it is remote, exhibits apparent naturalness, is of large size and is undisturbed by modern technological society. It is the experience of these attributes which can inspire profound emotional response and is thus evidence of aesthetic value. 'A high level of naturalness is, for most people, the strongest indicator of wilderness'.

The evidence about the values held by artists as a community was derived primarily from the works of, and interviews with, Tasmanian-based artists. Context considered that these values, primarily aesthetic and wildness (experiential), may also be shared by artists across Australia who focus on the depiction of wild places.

The aesthetic values of the Tarkine have been celebrated in artistic ventures since the nineteenth century, but more intensely since the 1990s. Two substantial projects have been initiated to document the Tarkine's aesthetic values: Rob Blakers' book *The Tarkine* (Wilderness Society, n.d.) and Ralph Ashton's *Tarkine* (WWF, Allen and Unwin, 2004). These books and David Warth's DVD *The Tarkine* have good circulation in Australia and beyond.

Perhaps the best known image of the Tarkine is Peter Dombrovskis' photograph *Tarkine Wilderness* depicting sand dune patterns on the Tarkine coast, produced as a poster by West Wind Press and held by the National Library of Australia in Canberra. This image is one of three by Dombrovskis held by the NLA which are available on pictureaustralia.org, all of which depict aspects of the Tarkine's coastal fringe.

While it is likely that the Tarkine is of aesthetic value to artists more broadly it is not possible to clearly demonstrate that broader significance. In terms of artistic output, more accessible areas in Tasmania, for example Lake St Clair, and on the mainland (the Blue Mountains for example) have attracted more interest from artists over a longer period than the Tarkine. Therefore the Tarkine's importance to the community of artists and for artistic expression cannot be supported at a national level.

A number of places in the National Heritage List have broadly comparable aesthetic qualities to the Tarkine. The Australian Alps, with its panoramas of range upon range and sometimes wild and exposed aspect has some similarities with the Tarkine. It however does not have a coastal component nor rainforest, and therefore has a very different aesthetic quality.

Other comparable places with recognised aesthetic values are on the National Heritage List for their World Heritage values, and should not therefore exclude the Tarkine from consideration for National Heritage value. These include the Wet Tropics of Queensland World Heritage Area, which has a largely natural coastline and areas of rainforest wilderness, but lacks the wild exposed nature of the Tarkine and its broad plains, vast panoramas and sweeping buttongrass plains. Further, the rainforest in the Wet Tropics is quite different to that in the Tarkine, being tropical as opposed to cool temperate rainforest.

The Gondwana Rainforests of Australia World Heritage Area, which is not World Heritage listed for its aesthetic qualities, shares the rainforest genus *Nothofagus* with the Tarkine, albeit different species. This serial listing is highly fragmented and lacks the coastline and the broad, wild landscape quality of the Tarkine.

The other obvious comparison is with the Tasmanian Wilderness World Heritage Area, which shares many of the aesthetic qualities of the Tarkine, such as wild, windswept coastlines, tannin-stained waters flowing through cool temperate forests and large sweeps of buttongrass. However, whilst the Tasmanian Wilderness is more rugged, alpine and dramatic, the Tarkine has significantly larger expanses of rainforest and broader vistas, giving a more expansive experience.

Unlisted places which could have a similar aesthetic quality include Croajingolong National Park, although this is very much smaller and more linear than the Tarkine, and less wild in terms of weather; and the national parks of south Western Australia which are generally more arid, lack the mountains and rainforest of the Tarkine and comprise relatively accessible coastal strips. None of these places has the well developed aesthetic qualities related to the experience of 'wildness' of the Tarkine.

It is likely that the Tarkine has outstanding heritage value to the nation under criterion (e) for its aesthetic characteristics.

Criterion F: Demonstrating a high degree of creative or technical achievement at a particular period

Historic heritage values – below threshold

The Tarkine is not associated with outstanding creative or technical achievement. Of some technical note is the Savage River iron ore mine slurry pipeline, constructed in 1967. The pipeline runs for 83 km above and below ground from the mine to Port Latta on the north west coast. This was the first pipeline of this type constructed anywhere in the world. The pipeline was such a technological success that the concept has been subsequently applied throughout Australia and globally. Although much longer slurry pipelines have now been built, the Savage River pipeline is significant as a technological innovation that continues to be used to transport products from remote mines to processing facilities. Nevertheless, it is based on earlier technologies used in mining to sluice or enable water-borne transport of mining product over

shorter distances. While significant, it is unlikely that the Savage River pipeline exhibits the degree of technical achievement to match other engineering projects of a national scale.

The Tarkine is unlikely to have National Heritage values against criterion (f) for historic heritage.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

Historic heritage values – below threshold

The Tarkine has an association with historical interest groups for its grazing, timber and mining industries, but this association generally resides at the regional or state level. A re-enactment of coastal droving was undertaken in 2004 and billed as the 'Bicentenary Cattle Drive'. Some local inhabitants however did not support the re-enactment, with Indigenous people expressing strong concern over the impact of the event on coastal Aboriginal archaeological sites. Marie Bjelke Petersen's novel *Jewelled Nights* (1924) was set in the Savage River osmiridium fields, and in 1925 was made into a film that enjoyed some success. The novel and film – while achieving a level of regard in the realm of Australian literature and film – are not sufficiently noteworthy to warrant a significant cultural association for the Tarkine.

The Tarkine is unlikely to have National Heritage values against criterion (g) for historic heritage.

Criterion H Demonstrating the place has outstanding heritage value to the nation because of the place's special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history

Historic heritage values – below threshold

James (Philosopher) Smith (1827-1897) prospected within the Tarkine area, but is recalled in the *Australian Dictionary of Biography* mainly for his discovery of the Mount Bischoff tin deposit which lies outside the Tarkine as it is being considered in this assessment. Henry Hellyer (1790-1832) and John Helder Wedge (1793-1872) are also mentioned in the *Australian Dictionary of Biography* for their explorations of the Tarkine. However, in both cases these adventures are recorded as only one component, rather than a pivotal event, in their significant lives. Marie Bjelke Petersen (1874-1969) penned a number of well-received novels, including the widely acclaimed *The Captive Singer* (1917) that sold over 100,000 copies in English and 40,000 in Danish. *Jewelled Nights* was not her most significant novel and the only one to be set in the Tarkine area.

The Tarkine is unlikely to have National Heritage values against criterion (h) for historic heritage.

History:

The Tarkine - History

The Tarkine is named after the Tarkine [Tarkiner] tribe, the traditional owners of the Sandy Cape region located on the west coast of Tasmania (McFarlane 2008:220). The north west coast was also inhabited by three other tribes, namely the Pee.rapper (West Point), the Manegin (Arthur River mouth) and the Peternidic (Pieman River mouth)(McFarlane 2008:220). These Aboriginal tribes inhabited the coastal areas of the Tarkine for at least 4 000 years; the date for the oldest shell midden located at the mouth of the Arthur River (Stockton 1984b:61). During the last 2,000 years, Aboriginal tribes along the west coast, in particular the northwest tribes, exploited the rich and varied resources of the coast and the scrubby hinterland that fringed it.

During the summer months, semi-sedentary ‘villages’ were established at key resource rich locations such as West Point (known as Nongor) which was located next to a elephant seal colony (Plomley 1966:184; Jones 1967). Excavation of West Point midden has provided an important insight into Aboriginal life on the northwest Tasmanian coast (Jones 1966). During the summer months food, in particular seals and coastal birds, was available in its greatest amount leading to the development of semi-sedentary villages (Jones 1974, 1975:3, 1978:36, 1981:7/88). Winter on the other hand was a time when food was scarer, forcing the village groups to disband into smaller groups which fanned out moving up and down the northwest coast (Jones 1978:36).

Aboriginal people also used the hinterland, an area thick with tea tree scrub in a complex of swamps, to hunt terrestrial mammals (wallabies, small marsupials), lizards and waterbirds, to gather plant foods, quarry spongolite for stone tools and to trade for ochre (Jones 1981:7/88). The Tarkine area also contains extensive scatters of stone artefacts, rockshelters, human burials, petroglyphs of geometric forms and stone arrangements which add to our knowledge of Aboriginal life during this time (Jones 1965 and 1980; Stockton and Rogers 1979; Lourandos and Bowdler 1982; Stockton 1982; Cosgrove 1983 and 1990; Flood 1983 and 1990; Richards and Sutherland-Richards 1992; Collett *et al* 1998).

The first recorded sighting of the Tarkine region by Europeans was when George Bass and Matthew Flinders circumnavigated Van Dieman’s Land (Tasmania) in 1798. In 1803, British settlement began in Van Dieman’s Land and explorations into the traditional lands of the Tasmanian Aboriginals were initiated (Plomley 1991:3; McFarlane 2008:xi). Very quickly, Aboriginal people’s land began to be acquired on the basis that Van Diemen’s Land was without settled inhabitants (McFarlane 2008:xi).

James Kelly sailed up the west coast in 1815/16 and in 1823 Charles Hardwicke sailed from Launceston to the Arthur River, describing ‘rich grass pasture’. Later in 1824, James Hobb landed at the Pieman River noting the stands of timber. However, the earliest European extraction of resources from the Tarkine came in the form of 'piners', who from 1816 began navigating many of the coastal rivers to collect cargoes of Huon pine.

In 1825 the Van Diemen's Land Company (VDLC) was formed and granted land in the northwest part of Tasmania for wool production. The VDLC's chief surveyor Henry Hellyer led an expedition in 1827 and mistakenly concluded that the Tarkine was suitable for sheep grazing, an impression reiterated by John Helder Wedge after his survey of the far northwest.

By 1826, the Aboriginal resistance to dispossession had reached ‘the point of all-out war’ (McFarlane 2008:xii). In 1826, Jorgen Jorgenson arrived in Hobart and was employed by the VDLC to lead expeditions into the interior, which had as their aim the opening up of stock routes (Plomely 1991:7). In 1827, he left for an expedition where he visited the west coast of Tasmania and made numerous diary entries regarding Aboriginal people’s way of life (Plomely 1991). The diaries of George Augustus Robinson (Aboriginal Conciliator) also provide detailed accounts of tribes in the northwest as he conducted his ‘Friendly Mission’ from 1830 to 1834 (McFarlane 2008:xiii). The aim of the ‘Friendly Mission’ was to ‘organise and effect the removal of the remaining Aboriginal inhabitants [in the northwest] from their tribal lands to permanent exile on Flinders Island’ (McFarlane 2008:xiii).
The ethnographic records from Jorgen Jorgenson and George Augustus Robinson make numerous references to Aboriginal huts including their location, construction, size and use along the entire west coast (Plomley 1966; 1991, Mitchell 1988:14). The frames of these huts were commonly made with pliable tree stems and less commonly with whale rib bones. The frame supported walls made of bark, grass or turf:

their huts…..are in the form of a semi-circular dome and are very commodious and quite weather proof. They are called GAR.DOWN….Some of these huts are from ten to twelve feet in diameter and eight feet in

height. The door or entrance is a small hole fourteen inches wide and two feet high, and this aperture is made to answer the threefold purpose of door, window and chimney….Their huts or cottages are constructed by first placing a long stick in the ground and bending it over and forcing the other end into the ground at the distance required for the diameter of the hut….this is continued until they have a sufficient quantity to support the weight of thatch that is to be put on. After the frame or skeleton of a hut is completed they thatch…..[with] long grass which they call NEME.ME.NE…..Some of these huts are lined with the bark of tea-tree and are remarkable warm (Plomley 1966:175).

There is also a detailed account by Robinson on 28 February 1834 where the Tarkiner attacked the Tommyginny:

They told my natives that they had fought the TOMMYGINNY but a short time previous.…and that one of their people, LOETH.GIDDIC brother to HEE.DEEK, had been killed and that they the TARKINE had also killed one of the TOMMYGINNY, LIN.NER.MER.RY.ROON, a big man…..they and the TOMMYGINNY have been at amity and at war alternately for a long period; that on this occasion the TOMMYGINNY came to them on a visit and brought with them a quantity of red ochre.…..They asked the TOMMYGINNY for some red ochre which they refused, which was the ground for the quarrel. It was then resolved by the TARKINENER to attack the TOMMYGINNY, and which was done accordingly and took place at the place of my encampment at Sandy Cape (Plomley 1966:854).

Other Europeans also witnessed aspects of Aboriginal way of life, in particular hunting and gathering practices. In 1921, J. Kelly reported how Aboriginal women hunted and killed seals on King George Rocks:

We gave the women each a club that we had used to kill seals with. They went to the water's edge and wet themselves all over their head and body as they said to prevent the seals from smelling them. As they walked along the rocks they were very cautious not to (go) windward of them as they said a seal would sooner believe his nose than his eyes when a man or woman came near him. The six women walked into the water, two and two, and swam to three rocks about fifty yards from the shore. Each rock had about nine or ten seals on it. They were all laying apparently asleep. Two women went to each rock with their clubs in hand.…After they had been lying on the rocks for nearly an hour the sea occasionally washing over them and they were quiet naked. We could not tell their meaning for remaining so long. All of a sudden the women arose up on their seats, their clubs at arms length. Each struck a seal on the nose which killed him. And in an instant they all jumped up as if by magic and killed one more.…Each of them dragged a seal into the water and swam with it to the rock where we was standing and then swam back to the rock and brought one more each which made twelve seals (Kelly 1921:177 in Hiatt 1967:207-8).

Women also dived for huge quantities of abalone (*Notohaliotis*) and warreners (*Subninella*) which made a large contribution to their diet (Jones 1981:7/88). There are also ethnographic accounts of shellfish collection practices.

Hitherto we had but a faint idea of the pains the women take to procure food requisite for the subsistence of their families. They each took a basket, and were followed by their daughters, who did the same. Getting on the rocks, that projected into the sea, they plunged from them to the bottom in search of shell fish.…They did this repeatedly until their baskets were full. Most of the them were provided with a little bit of wood, cut into the form of a spatula…and with these they separated from beneath the rocks at great depths, very large sea ears…They also caught large lobsters which they had killed as soon as they had been caught (Labillaridére 1800:309-310 in Hiatt 1967:127-8).

Even though Robinson successfully completed his mission in1834, there was still a number of small family groups of Aboriginal people living in and around the Tarkine region (Plomley 2008:959-960). On 10 December 1842 Mr William Gibson, the newly appointed Superintendent of the VDLC, informed the

Court of Directors that:

the natives who had hitherto been so troublesome were captured upon the 4th instant near the River Arthur and forwarded them yesterday to Launceston, their party consisted of a middle-aged man and female, two males about 18 and 20 years of age, and three male children between 3 and 7 years old (in Murray 1993:514).

Records indicate that the man and woman were John Lanna (also spelt Lanne) and his wife Nabrunga and their five children Banna, Pieti, Albert, William and Frank (Murray 1993:514). Gibson wrote that the Aboriginal family was captured near the Arthur River by sealers and that they were the last Aboriginal people 'at large in …[the] colony' to be removed (in Murray 1993:514). The family was removed to Flinders Island and by 1847 the removal of Aboriginal people from the Tasmanian mainland to Flinders Island ceased (Ryan 1996:199, 202). William and Banna were the only family members to have survived internment at Flinders Island (Plomey 1987:882). William was moved to Oyster Cove south of Hobart with 46 other Aboriginal people (Ryan 1996:203). William lived until 1869, leaving behind his wife Truganini (Petrow 1997:93, 94). At the time, William was considered to have been the last full-blood Aboriginal man to die in Tasmania (Ryan 1996:214).

The dispossession of Aboriginal people opened up the Tarkine for European use. As early as the 1830s squatters were using parts of the Tarkine coastal region for cattle grazing. However, large-scale commercial grazing did not begin until 1875 when a contract was signed to deliver cattle to supply the Mount Bischoff mining community. The development of other mining communities in the Tarkine, such as Balfour, and at Zeehan provided impetus for stock rearing, especially in the use of the coastal region between the Pieman and Arthur Rivers as a stock route from the north. Although by 1840 Temma (Whales Head) had become established as the best landing place along the coast, the overland route between here and the Pieman River remained undeveloped. Moving cattle from this region to markets remained problematic until the late 1870s, by which time miners had cut coastal trails north and south of the Pieman River. In 1878 a punt was established at Arthur River. From this time cattle could be transported across the Arthur River, driven down the coastal route to the Pieman River, and then across the Pieman to Zeehan and elsewhere. This coastal trade peaked in the late 1880s when the Zeehan silver-lead field began to become a substantial enterprise. More than a dozen huts and/or stockyards were built by drovers using the coastal route.

Coastal droving began to be phased out in the 1890s in the face of cattle shipment by sea and increasingly by road and rail, and competition from graziers closer to markets. The decline of the Zeehan market in World War One assisted in this decrease. The last coastal drive probably took place in 1936. Increasingly the plains along the coastal route began to assume an importance for agistment, allowing graziers to move stock to the coast to allow the home pastures to recuperate. A sharp increase in this activity occurred with the formal creation of the South Arthur and Marrawah Agistment Areas in 1934. By the 1950s the coastal region between the Arthur and Pieman Rivers under Crown ownership had been divided into the Sundown Run and the Southern Run. Agistment continues to the present time, although it is now firmly regulated to ensure sustainable grazing.

The explorers and prospectors S.B. Emmett and W.R. Bell and Leopold von Bibra used information gathered by Hellyer and Wedge in expeditions during the 1860s, with the latter following rivers and streams to enter previously unvisited territory. James 'Philosopher' Smith explored the upper reaches of the Arthur River in 1871 and discovered Mount Bischoff and its tin deposits. In 1876-77 Charles Sprent discovered tin and gold near Mount Heemskirk, iron ore at Savage River, and osmiridium and copper at Whyte River. The discoveries of Smith and Sprent inspired widespread prospecting of the west coast. Alluvial gold was discovered at the Brown Plains in 1879, attracting 250 miners to the lower reaches of the Pieman and Savage Rivers. Silver-lead discoveries in the Heazlewood-Whyte River districts in 1879-

90 spurred mining activity, but most of the mines in this area did not last beyond the 1890s. Only the Magnet mine managed continuous operation into the twentieth century. An unsuccessful attempt was made to employ a hydraulic boom to extract the gold deposits at Corinna in the mid 1890s, a unique adoption in the Tarkine of a technology developed in New Zealand.

The final phase of mining prior to rapid decline in the northwest occurred in the period from the late 1890s to World War One. The early 1900s witnessed a decade of intensive copper mining in the Balfour area, but shallow mineral deposits caused the field's eventual collapse. The end of the nineteenth century was the era of the horse-drawn mining tramway. Tramways connected many mines to the Waratah-Corinna Road and one, in use until 1911, was constructed to connect Balfour to the port of Temma. In 1902 a steam tramway replaced the horse-drawn tramway at the Magnet mine, connecting the mine to the Emu Bay Railway which was constructed in 1898 to link Zeehan and Burnie. Although osmiridium mining partially offset the mining decline after World War One, only the Magnet mine carried on substantial work in the Tarkine. This mine was decommissioned in the 1930s and the invention of the ballpoint pen in 1945 killed the demand for osmiridium (used in fountain pen nibs). The Tarkine mining industry experienced rejuvenation in the 1960s. The Savage River iron ore mine was reopened in 1967 and an 83km long pipeline was constructed to carry iron ore slurry to Port Latta on the north west coast of Tasmania. This represented the first use of this technology in the world. Other mines have been developed near Corinna, on the Arthur River, and at Mount Cleveland, among other localities.

During the mining period forests were cleared to provide fuel and industrial timber, as well as to clear paths for tracks, roads and tram and railways. Piners offset some of their costs by ferrying stores to miners, before collecting timber for the return journey. The Pieman River was a main focus of the early timber trade from the 1850s, directed principally to the extraction of Huon pine, King Billy pine and Stringybark. Owing to transport difficulties and a plentiful supply, the early industry was wasteful and inefficient, with perhaps not more than one quarter of the timber removed from some logs. The mining boom in the 1870s caused a rapid increase in timber extraction, with wood required for fuel, buildings, sleepers, and shaft and adit shoring. The introduction of steam sawmills resulted in greater forest destruction and the creation of bush tramways, which enabled large logs to be hauled by bullocks to transportable sawmills that could be moved after resources became depleted. By 1910 steam locomotives had largely replaced bullocks. Demand for timber increased after the Great Depression and better communications enabled the establishment of mills in previously inaccessible places. From the 1960s millers began turning their attention to the formerly untapped resources of the Arthur River valley. The increasing use of heavy equipment in the decades after World War Two destroyed forest habitat, hindering regeneration. Improved roads and the consequent use of logging trucks saw the end of the bush mill and the centralisation of milling in Smithton on the north coast. Clear felling for the woodchip industry began in the 1970s and in the 1980s lesser quality Category 2 logs began to be used for timber. Concern over the loss of old-growth forest and decreasing biodiversity led to restrictions being placed on timber harvesting.

Throughout the period of European colonisation of Tasmania, the land and sea in and around the Tarkine have always held a special significance for Tasmanian Aboriginal people (Ryan 1996). Ever since their removal from traditional lands the Aboriginal community has maintained a strong interest in and connection to their country, actively petitioning the British and Tasmanian Governments in pursuit of the return of land and recognition of land rights. In the 1970s the Aboriginal community formed representative organisations to actively campaign for their recognition as the first Tasmanians and for their rights. In 1973 and 1976, the Tasmanian Government recognised the cultural significance of the petroglyphs at Sundown Point and the shell middens and hut depressions at West Point by declaring them State Reserves (www.parks.tas.gov.au/index.aspx?id=5718). Aboriginal people continue to play a key role in the management of these places to ensure that they are preserved for future generations.

In 1977 a petition for the recognition of prior Aboriginal ownership, return of all sacred sites, mutton bird

islands and Crown land in addition to compensation was presented to Queen Elizabeth II during her visit to Tasmania (Ryan 1996:166). Another attempt for land rights was made with the Tasmanian Government in 1985 which included the request to return Mount Cameron West, just to the north of the Tarkine (Ryan 1996:275-6). It wasn't until 1995, when the Tasmanian government passed the *Aboriginal Lands Act* that Perminghana (Mount Cameron West), was returned with another 11 places across Tasmania to the Aboriginal community because of their cultural importance. The Aboriginal community continue to pursue the return of land at West Point and Sundown Point as these places have a particularly strong connection for them.

Condition:
Most of the Tarkine is in a very 'natural' condition according to the biophysical naturalness scheme adopted in the Tasmanian Comprehensive Regional Assessment. Biophysical naturalness is an indicator of the level of disturbance to the functioning of natural systems on a scale of 0 (high disturbance) to 5 (low disturbance). Over 90% of the Tarkine area entered onto the Register of the National Estate was found to have a biophysical naturalness rating of 5.

Limited areas have been subjected to intensive forestry operations, small scale mining and mineral exploration as well as cattle grazing on the coastal strip. Plantations and extensive areas subjected to intensive silviculture have generally been excluded. Off road vehicle use is increasing, particularly in the coastal zone.

The condition of the Aboriginal shell middens along the west coast is varied; however the most common disturbance is related to off road vehicle and bike use, cattle grazing, development (telephone tower installation and shack construction) and deflation through exposure to wind and rain (Collett *et al* 1998a and 1998b). During inspections of some of these hut depressions sites by Collett *et al* in 1998, they found that a large number of the huts depressions and the middens where stable and in places covered by grass. Some of the hut depressions have been directly affected by the disturbance listed above (Collett *et al* 1998a and 1998b), however the current status of these sites is unknown and a source states that the middens at West Point have not been inspected since the1990s but at the time were stable and covered in grass (O'Connor 2007). A number of hut depression sites have also been subject to archaeological excavation including a hut at Sundown Point (TASI 2421), completely excavated by Ranson in the 1970s (Jones 1980:159; Stockton 1984a:28; Richards and Sutherland-Richards 1992:28, 31) and part of a hut depression at West Point midden was excavated by Jones between 1964-5 (Jones 1965).

There are some in-holdings within the proposed boundary, notably the Savage River Mine and the Reece Powerstation. Developments in or adjacent to the proposed area referred under the *Environment Protection and Biodiversity Conservation Act 1999* include road construction, kelp collection, offshore seismic testing, the Heemskirk Windfarm, the Tarkine Road and mining and related developments.

Although the magnesite karst features are not visually significant, and the surface landforms are of limited extent, they are sensitive to direct damage by souveniring and excavation. Karst areas are also very sensitive to fire management and other land management practices undertaken within their catchment areas.

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