

THE NORTHERN TERRITORY OF AUSTRALIA

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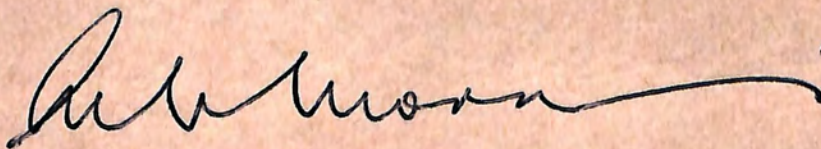
CONFIDENTIAL
CABINET DECISION

No.....5358.....

Submission No.: 4599

Title: METEORITES LEGISLATION

Cabinet deferred further consideration.



A. G. MORRIS
Secretary to Cabinet.

10 November 1987

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THE NORTHERN TERRITORY OF AUSTRALIA

Copy No: 1

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SUBMISSION No: 4599

FOR CABINET

Title:	METEORITES LEGISLATION
Minister	HON. R A HANRAHAN, M.L.A.
Purpose:	To obtain Cabinet approval for the introduction of the Meteorite Bill in the Legislative Assembly
Relation to existing policy:	<p>Similar to existing Natural and Cultural Protection Acts:</p> <p>Similar to Meteorite Protection Acts in existence in other Australian States</p>
Timing/ legislative priority:	November sittings
Announcement of decision, tabling, etc:	NIL
Action required before announcement:	NIL
Staffing implications, numbers and costs, etc:	NIL
Total cost:	NIL

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Department/~~XXXXX~~ MINES AND ENERGY

COMMENT ON CABINET SUBMISSION No.

TITLE: METEORITES LEGISLATION

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COMMENTS:

The submission is supported.

SIGNED: _____

Campbell

DESIGNATION: A/SECRETARY

DATE: 23/10/87

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Department/AuthorityLANDS..&..HOUSING.....

COMMENT ON CABINET SUBMISSION No.

TITLE:METEORITES LEGISLATION.....

COMMENTS:

This Department has no objections to the proposals in the submission.

The submission does not cover the question of access to meteorite sites but it is understood that Parliamentary Counsel is aware of this and will take up the matter.

SIGNED: *R.H. Brockman*

DESIGNATION: HEAD OF SECRETARIAT

DATE: 22.10.87.

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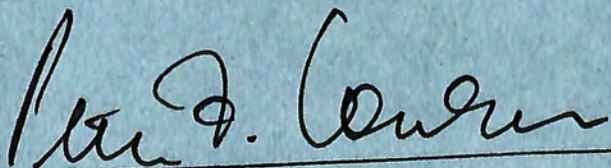
Department/Authority **LAW**

COMMENT ON CABINET SUBMISSION No.

TITLE: **METEORITES LEGISLATION**

COMMENTS:

This submission is supported.



SIGNED: **C.E. CROFT.**

DESIGNATION: **SECRETARY, DEPARTMENT OF LAW**

DATE: **15 OCTOBER 1987**

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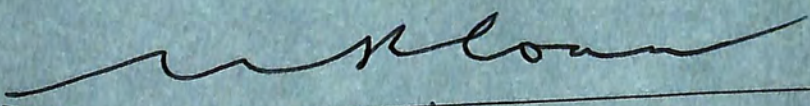
Department/Authority.....NORTHERN TERRITORY..TREASURY.....

COMMENT ON CABINET SUBMISSION No.

TITLE:METEORITES..LEGISLATION.....

COMMENTS:

There do not appear to be any budgetary or economic implications arising from the Submission's recommendations.



SIGNED: N R CONN

DESIGNATION: UNDER TREASURER

DATE: 25 OCTOBER 1987 **CONFIDENTIAL**

CONFIDENTIAL

Department/Authority CONSERVATION COMMISSION

COMMENT ON CABINET SUBMISSION No.

TITLE: METEORITES LEGISLATION

COMMENTS:

The proposals provided for the protection of meteorites and tektites by legislation are supported.

It is suggested that the Second Reading Speech should include mention of tektites.

With reference to the draft Bill, it is suggested that further advice be sought from the Department of Law as to whether the provisions of section 5(b) may be construed as authorisation for the recovery of a meteorite for the purposes of section 7(3). It may be that for the purposes of the latter section, the matter should be clarified by requiring the written authority of the Board.

SIGNED: Anthony Thomas

DESIGNATION: DIRECTOR OF CONSERVATION

DATE: 23.10.87

CONFIDENTIAL

C O N F I D E N T I A L

THE ISSUE

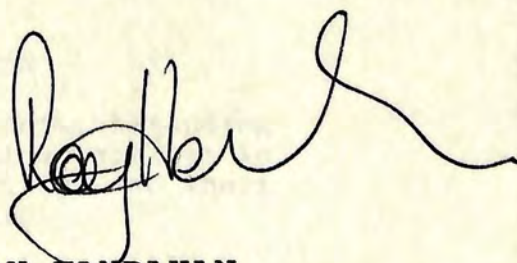
1. To approve the tabling in the Legislative Assembly of the draft for Meteorites Legislation prepared by the Northern Territory Department of Law in conjunction with the Northern Territory Museums and Art Galleries.

BACKGROUND

2. Meteorites and associated impact structures are of considerable value to science and tourism. Unlike other Australian States, the Northern Territory has no specific legislation to protect either the meteorites or their craters.
3. The Act will introduce certain measures intended to regulate the sale and exportation of meteorite samples from the Northern Territory and enhance the documentation of existing material. The draft provision is similar to those prepared in other Australian States which are of proven value in the protection of this heritage.

RECOMMENDATION

4. It is recommended that Cabinet approve the introduction of the Meteorite Bill in the Legislative Assembly.



RAY HANRAHAN
Minister for Conservation

28 / 10 / 87

C O N F I D E N T I A L



Serial 68
Meteorites
Mr Hanrahan

NORTHERN TERRITORY OF AUSTRALIA

A BILL for AN ACT

to make provision for the protection of
meteorites and tektites

BE it enacted by the Legislative Assembly of the Northern Territory of Australia, with the assent as provided by the *Northern Territory (Self-Government) Act 1978* of the Commonwealth, as follows:

1. SHORT TITLE

This Act may be cited as the *Meteorites Act 1987*.

2. DEFINITIONS

In this Act, unless the contrary intention appears -

"Board" means the Museums and Art Galleries Board of the Northern Territory established by section 5 of the *Museums and Art Galleries Act*;

"meteorite" means a natural mass that has fallen to the earth from beyond the atmosphere and includes a tektite.

3. PROPERTY IN AND MANAGEMENT OF METEORITES

(1) Subject to subsection (2), and notwithstanding the degree of their attachment to land, all meteorites in the Territory are the property of the Territory and their management and control is vested in the Board.

(2) A meteorite which had been severed or otherwise removed from the ground in which it was naturally imbedded or on which it naturally lay (whether or not as the result of erosion) and taken into possession by a person -

(a) before the commencement of this Act; or

(b) outside the Territory,

Meteorites

is not by virtue of subsection (1) the property of the Territory nor is its management and control vested in the Board by virtue of that subsection.

(3) The onus of proving that a meteorite had been severed or otherwise removed from the ground in which it was naturally imbedded or on which it naturally lay and taken into possession by a person -

- (a) before the commencement of this Act; or
- (b) outside the Territory,

rests on the person asserting that fact.

(4) Notwithstanding that a meteorite is the property of the Territory, neither the Territory nor the Board are liable for any damage or loss naturally resulting from the impact of a meteor or the presence of the meteorite.

(5) To the extent that subsection (1) effects an acquisition of property by the Territory, the Territory shall pay just compensation to the person whose property in a meteorite is so acquired and such compensation is recoverable in a court of competent jurisdiction.

4. PRESERVATION AND SCIENTIFIC INVESTIGATION

(1) Subject to subsection (2), the Board shall take such steps as it thinks fit to preserve a meteorite *in situ* or at such other place as it thinks fit.

(2) The Board may allow or make arrangements for scientific or other investigation of a meteorite.

5. DUTIES OF PERSONS FINDING METEORITES

A person who finds a meteorite the property of the Territory -

- (a) shall, as soon as practicable after the finding, give notice of it to the Board; and
- (b) may recover it and deliver it to the Board.

6. PROTECTION AND RECOVERY OF METEORITES

No person shall -

- (a) wilfully damage or destroy a meteorite the property of the Territory or the Board; or
- (b) except for the purpose of recovering it and delivering it to the Board, remove or be in possession of a meteorite the property of the Territory.

Penalty: \$1,000.

Meteorites

7. REIMBURSEMENT OF EXPENSES

(1) The Board may, in its discretion, refund the reasonable expenses incurred by a person, in -

- (a) notifying the Board of the finding of a meteorite;
- (b) furnishing information to the Board which results in the finding of a meteorite; or
- (c) recovering and delivering a meteorite to the Board.

(2) Notwithstanding subsection (1), the Board may offer and pay a reward in a case referred to in that subsection.

(3) Where damage is occasioned to land in the course of the recovery of a meteorite by or on the authority of the Board, the Board shall compensate the owner of the land for that damage and such compensation is recoverable in a court of competent jurisdiction.

NORTHERN TERRITORY METEORITE LEGISLATION

COMMITTEE NOTES/EXPLANATORY MEMORANDUM

DEFINITIONS

METEORITE -a solid object which has fallen to the Earth's surface from space without being completely vapourized during its passage through the atmosphere. Meteorites frequently break up in flight with fragments. The fragments are considered to be part of the same meteorite and are named accordingly.

TEKTITE -a fragment of silicate glass of non-volcanic origin which has undergone aerodynamic ablation during hypersonic flight through the Earth's atmosphere.

SCIENTIFIC IMPORTANCE OF METEORITES

Meteorites carry information about a wide variety of solar system processes, specifically:

1. Those which occurred in the solar nebula prior to the formation of the planets.
2. Those which occurred in planet-like bodies and which are similar to processes occurring in the interiors of the Earth and other planets.
3. Those resulting from collisional interactions between interplanetary objects.
4. Those produced by interaction with solar and galactic cosmic rays.

In short, the aim of meteorite research is to learn more about the origin and evolution of the solar system.

Until the return of Apollo 11 with Lunar samples in 1969, meteorites were the only source of extraterrestrial material. Most meteorites are thought to originate in the Astroid Belt, beyond Mars. In spite of the achievements of the Apollo and other space exploration programs, we are still incapable of retrieving material from beyond our closest regions of space and meteorites remain most important source of extraterrestrial matter.

SCIENTIFIC IMPORTANCE OF TEKTITES

Tektites are apparently of terrestrial origin and consist of material ejected into space and subsequently re-captured by the Earth's gravitational field. The mechanism of ejection is not

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well understood. Unlike meteorites, tektites do not have a random distribution over the Earth's surface but are confined to four concentrations known as "strewn fields". The Northern Territory lies within one such strewn-field. Tektites are still incompletely understood and remain the subject of active research.

DEPENDENCE OF METEORITE RESEARCHERS ON THE PUBLIC

Meteorites are very rare objects. Only about 2800 authentic meteorites have been found over the whole planet. These fall into about 50 distinct clones and most clones are represented by only a few examples. It is therefore impractical for researchers to simply go out and find meteorites. The majority are found by members of the public who bring their finds to the attention of the scientific community.

HISTORICAL BACKGROUND ON N.T. METEORITES

Eleven authenticated meteorites have been found in the Northern Territory. For historical reasons these meteorites (or their "main masses" at least) are held elsewhere in Australia or overseas (list attached). The more recent finds (i.e. post 1950's) reveal a disturbing trend; new finds are not being reported to scientific institutions within the N.T. or within Australia. This is attributed to:

1. the post-WWII decline in South Australian meteorite research and withdrawal from the N.T.
2. the establishment of an export trade in N.T. meteorites.
3. the belated emergence of N.T. scientific institutions with active interest in meteorites. The N.T. Museums and the Geological Survey of the Mines and Energy Department both pursue this field now and have done so for some years.

EVIDENCE OF EXPORT OF METEORITES FROM THE N.T.

The Mineralogical Research Company based in California, U.S.A. is a major international dealer in meteorites. Their 1987 Meteorites and Tektites Catalogue lists 31 meteorites from around the world. Four out of the 31 listed are from the Northern Territory. No other Australian material is included and this can be attributed to some effective protection of meteorites as public property in all States except the N.T. Note that N.T. meteorites comprise less than 5% of total Australian meteorites.

Major private collectors purchase meteorites which rarely appear in sales catalogues. We are aware that substantial meteorite fragments have left the N.T. though no documentary evidence substantiating this can be presented. Advertisements to purchase meteorites have appeared in N.T. newspapers from time to time.

N.T. AS A MAJOR SITE OF METEORITES AND ASSOCIATED STRUCTURES

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Although the frequency of N.T. meteorites is low, there is a remarkable concentration of unusual and important meteorites from the N.T. and related impact structures. The Arltunga and Tavallah Valley meteorites belong to two rare groups of iron meteorites. The Huckitta meteorite belongs to the relatively rare polossite type and is by far the largest known meteorite of this type. The Henbury and Boxhole hypervelocity impact craters are some of the very few with associated meteorites. These craters are the youngest known and are very well preserved. They are of great scientific importance and the Henbury craters are also an important tourist attraction. Gosse's Bluff is a spectacular erosional remnant of an ancient meteorite impact. It is also a tourist destination. In other States the exploration for minerals and the development of pastoral areas has resulted in the discovery of many new meteorites, particularly in South Australia and Western Australia. The low frequency of finds in the N.T. and the relatively undeveloped nature of the N.T. indicate many more meteorites remain to be found.

HERITAGE CONSIDERATIONS AND ROLE OF THE N.T. MUSEUM

Meteorites provide us with information on the evolution of our Solar System and all that it contains. They are thus an important part of the natural heritage of humanity.

Museums have traditionally documented the natural history of meteorites, presented them to the public in displays and made research material available throughout the world.

The N.T. Museum has the appropriate expertise to undertake this role within the N.T.

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APPENDIX A

CHECKLIST OF NORTHERN TERRITORY METEORITES

<u>METEORITE</u>	<u>YEAR FOUND</u>	<u>LOCATION OF MAIN MASS OR PRINCIPAL MASS HELD IN AUSTRALIA</u>
ALIKATNIMA	1931	SOUTH AUSTRALIAN MUSEUM
ARLTUNGA	1908	SOUTH AUSTRALIAN MUSEUM
BOND SPRINGS	1898	UNIVERSITY OF MELBOURNE
BOXHOLE	1937	SOUTH AUSTRALIAN MUSEUM
HENBURY	1931	SOUTH AUSTRALIAN MUSEUM
HUCKITTA	1924	SOUTH AUSTRALIAN MUSEUM
MOUNT SIR CHARLES	1942	SOUTH AUSTRALIAN MUSEUM
RABBIT FLAT	1974	U.S. NATIONAL MUSEUM (ONE THIN SECTION ONLY)
ROPER RIVER	BEFORE 1953	MUSEUM OF VICTORIA
TAWALLAH VALLEY	1939	BUREAU OF MINERAL RESOURCES, CANBERRA
YENBERRIE	1918	AUSTRALIAN MUSEUM
UNDOCUMENTED PROBABLY TRANSPORTED N.E. OF MATARANKA	1981	ON SALE IN U.S.A. HENBURY

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SECOND READING SPEECH

METEORITES ARE OUR MOST IMPORTANT SOURCE OF EXTRATERRESTRIAL MATERIAL. THEY REVEAL TO US ASPECTS OF THE EARLY EVOLUTION OF OUR SOLAR SYSTEM AND THUS ARE AN IMPORTANT PART OF THE NATURAL HERITAGE OF HUMANITY. RESEARCHERS PRIZE THEM HIGHLY AS IT IS BEYOND MAN'S TECHNOLOGICAL CAPABILITIES TO DIRECTLY SAMPLE THEIR SOURCE: THE ASTEROID BELT BEYOND MARS. BECAUSE OF THEIR RARITY AND THEIR GREAT SCIENTIFIC IMPORTANCE ALL STATES OF AUSTRALIA HAVE SOME EFFECTIVE MEANS OF SECURING METEORITES AS PUBLIC PROPERTY. TASMANIA, SOUTH AUSTRALIA AND WESTERN AUSTRALIA EACH HAVE DETAILED LEGISLATION PROTECTING THEM.

TEKTIKES ARE PROBABLY OF TERRESTRIAL ORIGIN ALTHOUGH THEY ARE CERTAINLY NOT PRODUCED BY VOLCANOES. THEIR MODE OF ORIGIN IS NOT CLEARLY UNDERSTOOD. THEY MAY RESULT FROM METEORITE IMPACTS. TEKITE DISTRIBUTIONS OVER THE EARTH ARE NOT RANDOM BUT ARE CONFINED TO DISTINCT "STREWN FIELDS". THE NORTHERN TERRITORY LIES WITHIN ONE SUCH FIELD. TEKITE RESEARCH IS AN IMPORTANT ADJUNCT OF METEORITE RESEARCH.

FOR HISTORICAL REASONS THE MAIN MASSES OF THE ELEVEN AUTHENTICATED N.T. METEORITES ARE HELD IN OTHER AUSTRALIAN STATES OR OVERSEAS. IN THE PAST, SOUTH AUSTRALIAN METEORITE RESEARCHERS EXTENDED THEIR ACTIVITIES INTO THE NORTHERN TERRITORY AND INVESTIGATED REPORTS OF NEW METEORITES. THEY SECURED NEW FINDS AS PUBLIC PROPERTY, LODGING THEM WITH THE SOUTH AUSTRALIAN MUSEUM. IN SO DOING THEY PERFORMED A GREAT PUBLIC SERVICE. IN THE YEARS FOLLOWING WWII THESE RESEARCHERS EFFECTIVELY WITHDREW FROM THE N.T., LEAVING A VOID.

THE FORMER ABSENCE OF N.T. SCIENTIFIC INSTITUTIONS WITH AN ACTIVE INTEREST IN METEORITES MAY HAVE CONTRIBUTED TO THE ESTABLISHMENT OF AN EXPORT TRADE IN METEORITES. A MAJOR INTERNATIONAL SALES CATALOGUE PUBLISHED IN 1987 LISTS 31 METEORITES FROM AROUND THE GLOBE. FOUR OUT OF THE 31 ARE NORTHERN TERRITORY METEORITES. NO

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OTHER AUSTRALIAN MATERIAL IS INCLUDED. NOTE THAT N.T. METEORITES COMPRISE ABOUT 5% OF THE AUSTRALIAN TOTAL.

THE LATEST N.T. METEORITE WAS FOUND IN 1974 NEAR RABBIT FLAT. IT IS NOW REPRESENTED IN A SCIENTIFIC INSTITUTION IN THE U.S.A. BY A SINGLE THIN SECTION, PERHAPS 15 MICRONS THICK COVERING A PART OF A GLASS SLIDE. THIS IS NEITHER ADEQUATE FOR RESEARCH PURPOSES, NOR DO WE RETAIN EVEN A SMALL PART OF THIS, OUR NATURAL HERITAGE.

THE CONCERN IS NOT THAT PRIVATE COLLECTORS OWN FRAGMENTS OF METEORITES OR TEKTITES PER SE, BUT THAT THE PUBLIC INTEREST IS CATERED FOR. THIS LEGISLATION PROVIDES FOR THE PROTECTION OF ALL NEW FINDS AS THE PROPERTY OF THE NORTHERN TERRITORY. THEIR CONTROL WOULD BE VESTED IN THE MUSEUMS AND ART GALLERIES BOARD OF THE N.T., AN ORGANISATION EQUIPPED TO CARE FOR THEM, PRESENT THEM TO THE WIDER PUBLIC IN THE FORM OF DISPLAYS, AND MAKE MATERIAL AVAILABLE FOR LEGITIMATE RESEARCH ALL OVER THE WORLD. THE NEW LEGISLATION WILL NOT DISPOSSESS PEOPLE WHO CURRENTLY LAWFULLY HOLD METEORITES AND TEKTITES.

IN SPITE OF THE LOW FREQUENCY OF FINDS IN THE NORTHERN TERRITORY, WE HAVE A REMARKABLE CONCENTRATION OF UNUSUAL METEORITES AND RELATED STRUCTURES. THESE INCLUDE TWO VERY RARE TYPES OF IRON METEORITE, THE WORLD'S LARGEST STONY-IRON (THE HUCKITTA PALASSITE), SEVERAL EXTREMELY WELL PRESERVED HYPERVELOCITY IMPACT CRATERS (BOXHOLE AND HENBURY) WHICH BOTH HAVE ASSOCIATED METEORITES, AND THE SPECTACULAR EROSIONAL REMNANT OF AN ANCIENT METEORITE IMPACT, GOSSE'S BLUFF. THE HENBURY CRATERS AND GOSSE'S BLUFF ARE POPULAR TOURIST DESTINATIONS.

EXPERIENCE ELSEWHERE IN AUSTRALIA HAS SHOWN THE PASTORAL DEVELOPMENT AND MINERAL EXPLORATION HAS LEAD TO THE DISCOVERY OF MANY NEW METEORITES. IT IS LIKELY THAT THE MANY NEW ONES WILL BE FOUND WITHIN THE NORTHERN TERRITORY.

THIS LEGISLATION WILL BRING N.T. LAW ON METEORITES IN LINE WITH THAT OF OTHER STATES, ENSURE THAT AN IMPORTANT PART OF OUR

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NATURAL HERITAGE IS PROTECTED, AND GUARANTEE THAT SUFFICIENT MATERIAL IS AVAILABLE FOR CONTINUED RESEARCH INTO THE ORIGIN AND EVOLUTION OF OUR SOLAR SYSTEM.