



Australasian Wader Studies Group

A special interest group of BirdLife Australia

NORTH-WEST AUSTRALIA

澳大利亞西北部

WADER and TERN EXPEDITION

濱鳥及燕鷗考察項目

2019

Saturday 2nd to Sunday 24th February 2019

2019年2月2日(星期六)至24日(星期日)

JOINT LEADERS 領袖團隊

<p>Clive Minton, 地址：165 Dalgetty Road, Beaumaris, VIC. 3193. Australia. 電話：+61-3-9589 4901 電郵： mintons@ozemail.com.au</p>	<p>Rosalind Jessop, 電話：+61 427 521 857 電郵： moonbird39@gmail.com</p>	<p>Mike Dawkins 電話：+61 417 314 496 電郵： mike.dawkins@me.com</p>
<p>Chris Hassell, 地址：PO Box 3089, Broome. WA. 6725. Australia. 電話：+61-8-9192 8585 電郵： turnstone@wn.com.au</p>	<p>Prue Wright 電話：+61-404 002 745 電郵： Prue327@gmail.com</p>	<p>Katherine Leung 梁嘉善 電郵： katsoftdrinks@yahoo.com.hk</p>

Australasian Wader Studies Group 澳大利亞濱鳥研究組 (AWSG)

North-west Australia Wader & Tern Expedition 2019 2019 澳大利亞西北部濱鳥 及 燕鷗 考察項目

Saturday 2nd to Sunday 24th February 2019
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Background 背景

The AWSG was formed in 1981 as a special interest group of BirdLife Australia. Its objectives are: AWSG 於 1981 年成立，是國際鳥盟澳大利亞的合作伙伴，成立目的旨在：

- To monitor wader populations through a program of counting and banding to collect data on changes on a local, national and international basis. 統計和環誌監測濱鳥種群數量，以偵測數量變化
- To study the migrations of waders through a program of counting, banding, colour flagging and collecting of biometric data. 透過統計、環誌、佩帶足旗及測量身體數據研究濱鳥的遷徙
- To instigate and encourage other scientific studies of waders such as feeding and breeding studies. 參與或鼓勵與濱鳥相關的科研項目
- To communicate the results of these studies to a wide audience through the *Stilt*, the *Tattler*, other journals, the Internet, the media, conferences and lectures. 透過期刊、論文、傳播媒體、會議、講座等分享研究成果
- To formulate and promote policies for the conservation of waders and their habitat, and to make available information to local and national governmental conservation bodies and organisations to encourage and assist them in pursuing this objective. 協助或推動與濱鳥保育相關的政策
- To encourage and promote the involvement of a large band of amateurs, as well as professionals, to achieve these objectives 鼓勵大眾與鳥類專家參與，以達致以上的目標

North-west Australia was “discovered” to be one of the prime locations in the world for wading birds during the first RAOU (BirdLife Australia) “Expedition” there in August/September 1981. It is now known to have a peak population of nearly 750,000 waders, with a huge variety of species (50, nearly a quarter of the 214 species of waders worldwide). It has also proved to be an ideal place for wader studies with a warm, sunny, dry climate for 10 months of the year (usually!). Furthermore there is easy accessibility to the principal wader areas at Roebuck Bay, Broome (150,000 birds) and 80 Mile Beach (500,000 birds).

西北澳大利亞的豐富濱鳥多樣性在 1981 年 8 / 9 月始被發現。濱鳥數量最高可達 750,000 隻，包括 50 個物種。因為一年中有十個月是和暖、天晴及少雨，非常適合進行濱鳥的相關研究。濱鳥最集中的兩個地點布隆姆羅巴克灣(濱鳥數量達 150,000 隻)及八十里沙灘(濱鳥數量達 500,000)，皆是易於前往的地點。



80 Mile Beach Marine National Park – established 29th January 2013.
八十里沙灘海洋國家公園 – 於 2013 年 1 月 29 日成立

- The Eighty Mile Beach Marine Park is the 13th marine park declared in Western Australia 是西澳省第 13 個海洋國家公園
- The Park has 3 sanctuary zones, 1 recreation zone, 7 special purpose zones and 1 general use zone 包括 3 個保護地區、1 個休憩區、7 個特別地區和 1 個一般用途區域
- For more information about 80 Mile Beach Marine Park: 國家公園官網 <http://parks.dpaw.wa.gov.au/park/eighty-mile-beach>.



The area between Wirkinmirre (Willie Creek) and Warrawan (Barn Hill) are the traditional lands of the Yawuru people. We respectfully acknowledge the past and present traditional owners of the

land on which we will be conducting research, the Yawuru people. 國家公園內部份地域屬於 Yawuru 原住民的土地，我們在他們的土地上進行研究工作，必須尊重他們的土地、傳統與現況。

The areas around Anna Plains Station are the traditional lands of the Karajarri and Nyangumarta people. We respectfully acknowledge the past and present traditional owners of the land on which we will be conducting research, the Karajarri and Nyangumarta people. 國家公園內另一部份地域屬於 Karajarri 和 Nyangumarta 原住民的土地，我們在他們的土地上進行研究工作，必須尊重他們的土地、傳統與現況。

NWA 2019 澳大利亞西北部濱鳥及燕鷗考察項目 2019

A series of special expeditions has taken place over the years to undertake comprehensive long-term studies of the waders and terns in N.W. Australia. A further major N.W. Australia Wader and Tern Expedition will take place from: 過去在西北澳針對濱鳥及燕鷗進行過一連串的考察，是多年長期研究的一部分，本年的考察將在以下日期舉行：

Saturday 2nd to Sunday 24th February 2019 2019 年 2 月 2 日 (星期六) 至 24 日 (星期日)

The timing of the tides means that in 2019 the expedition will begin on a Saturday and end on a Sunday. Participants are of course still welcome to arrive early or stay afterwards if they wish, please would all persons plan to participate in the **full** expedition. 為配合潮汐，考察將在 2 月 2 日星期六開始，至 2 月 24 日星期日完結，參加者可自由決定提早到達，或在完結後繼續逗留，我們希望參加者能盡量參與**整個為期三星期**的考察。

This document is intended to provide relevant information to prospective participants. A large number of people (25-28 ideally) will be needed if a satisfactory team is to be available throughout this 3-week period. You are strongly encouraged to come and take part. Details of how to contact the expedition leaders are given at the front of this note. 本文件旨在為可能參與本年度考察的人士提供相關的資訊。每年為期三星期的考察項目需要約 25-28 人參與，我們希望你能成為一份子，請聯絡考察團的領袖 (聯絡資料在第一頁)。

Objectives: 目標：

The fieldwork program will, as usual, principally consist of regular banding and appropriate counting of waders and terns at two locations (Broome and 80-Mile Beach). This year additional effort will again be put into scanning for leg flags and colour bands, particularly at 80 Mile Beach. 野外工作如常包括在布隆姆羅巴克灣及八十里沙灘環誌及點算濱鳥及燕鷗數量，亦會在以上兩個地點，尤其是八十里沙灘，觀察足旗和色環。

The specific objectives of this Expedition are: 考察的主要目標如下：

- To obtain an estimate of the relative breeding success in the 2018 Arctic breeding season of all the main species of migratory waders. This is achieved by measuring the proportion of juveniles in catches. 根據捕捉到的一齡鳥數量，估算 2018 年度北極圈繁殖季節中，濱鳥的繁殖成功率。
- To catch additional samples of species which are less frequently caught in NW Australia, e.g. Black-tailed Godwit, Whimbrel, Grey Plover, Common Greenshank, Oriental Plover, Eastern Curlew, Little Curlew and Oriental Pratincole. 收集較少在西北澳捕捉到的濱鳥物種的數據，包括：黑尾塍鷗、中杓鷗、灰斑鴉、青腳鷗、東方鴉、大杓鷗、小杓鷗及普通燕鷗。
- To continue the program of putting individually lettered/numbered yellow leg flags on all the main medium/large migratory wader species caught at Broome and, several species at 80 Mile Beach. This is to facilitate the collection and calculation of survival rate data in the future

and to enhance the information obtained from flagged birds seen overseas. 繼續為各種中至大型濱鳥佩帶刻有獨立編號的足旗，以助日後收集及計算物種存活率，及使各個體在海外重見的紀錄 (resighting record) 比只佩帶沒號碼的足旗個體能提供更進一步的資料。

As a participant 作為參加者:

What you are expected to gain... 你可獲得...	What you are expected to give... 你需付出...
<ul style="list-style-type: none"> • Hands on experience of cannon netting and wader banding 親身體驗以炮網捕捉濱鳥，以及濱鳥環誌經驗 • Be part of the team of one of the world's most long-lived wader research programmes (Commenced 1981 – 38 years) 成為全球最悠久的濱鳥研究計劃團隊的一分子 (自 1981 年開始，已 38 年) • Wonderful opportunity to mix with, and learn from, a team of both local Australian and overseas participants with different backgrounds and experience 與澳洲當地及來自其他不同國家地區的參加者交流和互相學習的機會 • Unique bird (and other wildlife) watching experience in remote NW Australia (300+ species on Broome Bird Observatory's list) 在西北澳偏遠地區觀鳥(及其他野生生物)的體驗(布隆姆鳥類觀察站共錄得超過 300 種鳥類) • Experience of living on an active cattle station (Anna Plains) – 400,000 hectares. 在 40 萬公頃 Anna Plains 農場生活的體驗 	<ul style="list-style-type: none"> • Your readiness to work hard under sometimes hot and humid weather conditions 你的耐力與勤勞，偶爾於炎熱與潮濕的環境下工作 • Your willingness to live with, learn, share and be a contributor to the team 合群的態度，以幫助團隊完成所需的工作 • Your financial contribution to the running of the Expedition and wader research in NW Australia and the EAA Flyway. 財政上支持是次考察項目，以及在西北澳和東亞—澳大拉西亞飛行航道上的濱鳥研究

Itinerary 日程

A proposed itinerary for the 3-week period of fieldwork is attached. This can be summarised as: 為期三星期的野外工作日程總結如下：

Broome/Roebuck Bay 布隆姆/羅巴克灣	6 days 天
80 Mile Beach/Anna Plains 八十里沙灘/Anna Plain 農場	11 days 天
Travel between locations 來往兩地點的交通	2 days 天
Rest days 休息日	2 days 天

A typical catch day consists of net and keeping cages setting at the start of the day, followed by the catch and processing of birds on the beach. In the afternoon, participants are expected to help with gear maintenance and data entry on a rotation basis, or to enjoy their free time birdwatching and exploring the surrounding area before the communal dinner. Presentations/talks from participants will occur on some evenings after dinner. 一般的日程大約是早上前往沙灘架網及環誌站，然後等待

發動炮網，環誌抓到的濱鳥。下午參加者需輪流幫忙整理器材，以及輸入環誌資料，或是利用自由時間前往觀鳥及參觀。黃昏時分全個團隊一起晚餐，晚餐後或有由參加者主持的分享/講座。

Costs 費用

The Expedition has been a financially self-sustained programme over the past years mainly relying on financial input from each of the participants and generous support from the Western Australian Department of Biodiversity Conservation and Attractions. 本考察項目一直以來皆自負盈虧，主要靠各參加者所付出的費用，以及西澳政府的 Department of Biodiversity Conservation and Attractions (編者譯：生物多樣性保育及景點部)的慷慨支持。

The financial input from each participant not only contributes to the daily living and transportation expenses during the 3-week period, but also directly contributes to the expenses on consumable field equipment such as black powder and electric fuses for cannons, engraved leg flags and even part of the purchase costs of satellite transmitters, and satellite data downloading costs, to further research on wader migration. 參加者所付出的費用不單用以支付考察三星期的生活開支和交通費，也直接用作支付考察所需的消耗性器材，包括火藥、引線、足旗，以至購買衛星追蹤器和支持下載衛星數據的費用，以更進一步研究濱鳥的遷徙。

Participants will be responsible for the costs of travelling to join or leave the expedition at Broome or 80-Mile Beach. 各參加者需自行承擔前往西北澳的交通費用

When in N.W. Australia costs for each participants will be:-
抵達西北澳後費用如下：

Item 項目:	Cost 費用:
a) Daily cost of food and catering service 伙食費	\$26 per day 每天 26 澳幣
b) Daily supplies, laundry and consumable field equipment cost 日用品、洗衣費及考察所需的消耗性器材	\$20 per day 每天 20 澳幣
c) Transport costs (hire of 4WD, fuel, servicing and cleaning of vehicles) 當地交通費，包括租車、燃油、汽車保養及清潔等	\$43 per day 每天 43 澳幣
d) Accommodation at Anna Plains 在 Anna Plain 農場的住宿費	\$10 per day 每天 10 澳幣
e) Accommodation at Broome Bird Observatory 在布隆姆鳥類觀察站的住宿費	Pay separately** 另外支付**

****Accommodation bookings should be made directly with the BBO; a deposit may be required** PHONE: +61 8 9193 5600 E-mail broome@birdlife.org.au]
請提前聯繫 BBO 以預訂露天營地或有空調的房間 (共用浴室及洗手間)

Items a-d will be collected before commencement of the expedition where possible. Payment amounts will be notified to participants with banking details attached about 3 weeks prior to the start of the expedition. Payment can be made by bank transfer in AUD. A non-refundable deposit may be imposed for late withdrawals, as some communal supplies will need to be ordered in advance. Those who cannot use bank transfer, i.e. overseas participants, can pay with cash at the start of the expedition. Queries regarding finances should be directed to Prue Wright Prue327@gmail.com. 以上 a-d 項盡可能在考察開始前繳交，在 3 星期前以澳幣轉帳。如有參加者臨時不能出席，項目可能酌收部分費用以支付已預先購買的日用品。海外參加者如未能提前轉帳，可在抵達後以現金支付。有關財政的問題請聯絡 Prue Wright Prue327@gmail.com

BBO accepts cash, credit or direct debit cards for charges under item (e) above (a small surcharge applies to credit card payments).

以上(e)項請於抵達後以現金交予 BBO

All participants, other than local residents, will be expected to be full members of the team, residing at the one location. "Self catering" is not permitted.

除居住在布隆姆當地的參加者外，所有參加者均請安排在 BBO 住宿及與團隊一起。

Travel 交通

Broome is easily reached by air from Perth and Darwin. Flights from Melbourne, Adelaide or Sydney usually go via Perth during February. Connections from Queensland (Brisbane or Cairns) usually go via Darwin or Perth. Buses also run from Perth and Darwin.

布隆姆有內陸航班從柏斯或達爾文直達，亦有長途巴士從柏斯或達爾文到達。

People are strongly encouraged to come for **the whole period of three weeks**. This maximises efficiency with everyone becoming fully integrated into the team. It maximises enjoyment and benefits, and enables everyone to contribute as well as to learn. It also leads to a more effective team if changes in personnel are minimal.

我們鼓勵參加者參與整個三星期的考察，除了令參加者能彼此間更多機會熟悉外，也可使項目能更順利進行。

Although the expedition will formally start on a Saturday (February 2nd) participants are welcome to arrive earlier. The main "briefing" for the team will take place that evening.

項目將於 2 月 2 日開始，當日黃昏將會進行簡介會。參加者亦可選擇提前抵達。

Would all participants please ensure that the expedition leaders are aware of your specific arrival and departure details well in advance (contact names are at the front of this document). All airline or bus travellers will be met on arrival at Broome airport. BBO is 25 km away from Broome and there is no public transport to BBO.

參加者請預先通知考察團領袖有關抵達及離開的日期、時間、航班資料。我們會到布隆姆接送參加者前往 BBO。

Membership of AWSG 澳大利亞濱鳥研究組 (AWSG)會員

You are encouraged to join AWSG if you are not already a member. As a member of AWSG you will be able to follow other research results from throughout the flyway in the AWSG publication *Stilt* and in the periodic newsletter "*Tattler*". An application form is attached.

我們鼓勵參加者成為澳大利亞濱鳥研究組 (AWSG)的會員，可定期接收到 AWSG 的刊物"*Stilt*"和"*Tattler*"。

Climate 氣候

February is in the "wet" season in N.W. Australia with day temperatures reaching 32-35°C and night temperatures of around 25°C. There is still much sunshine even though it is cloudier than in the dry season. Heavy thundery showers occur almost daily in February, and there can even be a cyclone (as in February 2013). Humidity may also be very high.

二月是西北澳的雨季，日間氣溫約攝氏 32-35 度，晚間約攝氏 25 度，雖然雲量比旱多但季陽光仍然猛烈，經常有雷陣雨，有機會出現颱風，濕度較高。

Clothing 衣著

Light clothing (e.g. hiking gear) is ideal for daytime wear. Light long sleeve shirt and long trousers should be worn in the field. Several sets of clothing are required to cater for the tropical environment and the high chance of getting sandy and muddy.

宜穿著輕便的戶外活動衣物，長袖及長褲為佳，多帶備幾套以替換。

Bring your swim wear – there is a pool in Broome and at Anna Plains. You may also be able to go swimming in the ocean depending on the stinger situation (deadly jellyfish – see <http://www.broome.wa.gov.au/comm/jelly.htm>) – variable with weather conditions.

可帶備游泳衣，在布隆姆及 Anna Plains 農場可往游泳池游泳，但不建議到海中游泳，以免被水母整傷。

It may also be necessary to have some warmer clothing as a tropical storm can drop the temperature significantly. Although it is not uncomfortable getting wet in such a warm climate a lightweight waterproof top is advisable and an umbrella can be helpful!

在下雨後氣溫可驟降，請帶備一些輕便保暖及防風雨的衣物。可帶備雨傘。

There are good laundry facilities in Broome, and these are visited every day (communal laundry bag so put your initials on your clothing!) when we are based at this location (one of our shared tasks). At 80 Mile Beach we are also able to use laundry facilities at the station so daily washing of clothes is practicable. However, drying clothes in the wet season can be a problem, so bring enough changes of clothing – please avoid denim jeans and other slow drying materials.

在布隆姆我們每天會把髒衣物收集拿到洗衣店，然後拿回 BBO 晾乾。在 Anna Plain 農場亦會集中髒衣物借用農場的洗衣機清洗晾乾。洗衣晾衣的工作將由大家輪流幫忙。在雨季可能不容易把衣服很快晾乾，請帶備多套衣物替換，及盡量避免厚重難乾的衣物(如：牛仔褲)。

Light footwear only is necessary. Because we frequently have to run into the edge of the sea when the net is fired and occasionally wade around in mud and water on inland waters on Roebuck Plains/Anna Plains, one set of footwear should be “old” i.e. suitable for regular inundation. If you are planning on going bush bird banding appropriate enclosed protective footwear is required.

建議穿著輕便的鞋，在抓鳥時會需要在沙灘上(或石灘)跑到網前，及跑到淺水中，所以請預備一雙適合跑動及可弄濕的鞋。另外，如到草叢附近賞鳥或參與陸鳥環誌，最好有一雙可保護腳趾的鞋。

Catering 飲食

All the main cooking utensils will be supplied by AWSG or loaned to the expedition by the BBO. All food is purchased and organised communally by an out-sourced catering organiser. Participants are expected to help in some basic food preparation, washing up (about one day in every four days) and taking clothes to the laundromat (when in Broome) on a rostered basis.

我們會借用 AWSG 或 BBO 的餐具、食具及烹調工具。項目已聘用外判的工作人員為團隊集體購買食材及預備伙食。參加者可能需幫忙部分食物準備及洗碗等工作，亦會輪流幫忙送衣服到洗衣店及晾衣服的工作。

Please bring your own water bottle (about 500ml to one litre). A small plastic lunch box to hold your lunch is also needed. Extra water will be taken in the field to replenish your bottles. Cool boxes will also be provided to keep lunches cold.

當地的自來水可直接飲用，請帶備一個 500-1000 毫升的水壺以便帶到野外，我們會帶一些大水壺到野外，讓參加者可補給飲用水。請帶備一個便當盒，用以攜帶午餐/小食到野外。

Those having special dietary requirements such as vegetarians, diabetics, celiacs etc, or if you are allergic to any particular food please contact Prue Wright as soon as you know you are coming so that your requirements can be weaved into the menus and appropriate food ordered. Please note that as Broome is only a small town, food choices are limited.

如你在飲食上有特別需要，如素食或對某食物過敏，請盡早通知 Prue Wright，以便安排食物。布隆姆是一個小市鎮，某些食材可能不易買到，而團隊每天的飲食亦是共同烹調，若參加者的飲食要求太特殊，可能需要額外烹調。

Other Things to Bring 其他裝備

Everyone needs to bring sleeping equipment, a tent or mosquito net, and a towel. A light sleeping bag or even just a cotton sleeping bag liner may be sufficient. Foam rubber or an inflatable mattress, plus pillow, are highly desirable. You can purchase cheap tents (may not be water-proof) at Coles supermarket in Broome. It is very humid and can rain **very heavily**, so you would need a good quality, rain-proof tent.

參加者需帶備毛巾、露營用的床墊、枕頭、露營帳篷或蚊帳。當地的超市可購買到便宜(但質素不高)的帳篷。

Tents need only be light 1 or 2 person models. Some people prefer to sleep entirely in the open or under a mosquito net. However, there is a risk of heavy rain in February.
帳篷不要佔太多地方，注意二月有機會下大雨，因此帳篷必須防水。

At Broome you can book an air-conditioned room at the Bird Observatory or you can camp.
在 BBO 可選擇露營或有空調的房間。

At Anna Plains most people prefer to camp on the lawns of the house but there are some beds in the house.
在 Anna Plains 農場大部分參加者會在大屋周圍的草地露營，大屋內亦有數個房間和床。

A wide-brimmed hat and sunscreen/blockout are essential. Make sure your hat can be retained in a strong breeze. Sunglasses are required to reduce glare.
請帶備帽子和防曬用品，墨鏡。

A torch should always be used when walking around at night due to the presence of snakes, scorpions and centipedes that hunt at night (other small animals not people!). A head-torch is useful for mist-netting at night.
請帶備手電筒或頭燈，夜間地上可能會有蛇、蠍子、蜈蚣等。

Binoculars, telescope, camera and small tripod etc are, of course, all desirable. Anyone wishing to purchase a field guide (eg overseas people visiting Australia for the first time) are strongly recommended to obtain either the newest "Field Guide to the Birds of Australia" by Graham Pizzey and Frank Knight, or "Field Guide to the Birds of Australia" by Ken Simpson and Nicholas Day or Morcombe (compact). THESE FIELD GUIDES MAY BE PURCHASED AT THE BROOME BIRD OBSERVATORY. Mobile phone / notepad apps are also available for some of these books in the iTunes store on the web.

可帶備雙筒望遠鏡、相機、單筒望遠鏡、腳架等。如欲購買澳洲鳥類圖鑑，我們建議購買最新由 Peter Menkhorst, Danny Rogers, Rohan Clarke, Jeff Davies, Peter Marsack 及 Kim Franklin 著作的 "The Australian Bird Guide"，或 Graham Pizzey 和 Frank Knight 著作的 "Field Guide to the Birds of Australia"，或 Ken Simpson 和 Nicholas Day 著作的 "Field Guide to the Birds of Australia"，或 Morcombe (袖珍版)。BBO 可能有以上圖鑑的存貨，部份圖鑑也可在手機應用程式下載。

Health 健康

NW Australia is a very healthy area and climate. The domestic water is clean and potable. Mosquitos and sandflies can be a problem, especially after spring tidal series. Repellents ("Rid" is the most popular) can be purchased in Broome. If purchasing elsewhere they should contain the chemical DEET. Flies are very occasionally known to occur in plague proportions so a "hat net" can be a lifesaver.

西北澳的衛生狀況良好，自來水可直接飲用。注意蚊和其他叮咬的昆蟲(小黑蚊/蠓)，可在抵達布隆姆後購買含 DEET(待乙妥)的防蚊液。可帶備阻擋蒼蠅，附有紗網的帽子。

Because we visit farmland it is wise to ensure that your anti-tetanus protection is current before leaving home.

建議參加者確認你的抗破傷風疫苗仍然有效。

The mosquito borne Ross River Fever occurs throughout Australia - and preventative injections are not available - but its incidence is low. Long sleeved shirts and trousers should be worn in the early evenings and mornings and when frequenting areas such as the mangroves to avoid being bitten. Mosquito repellent with DEET should be worn. Prevention measures are highly recommended.

由蚊子傳播的疾病在當地並不常見，但亦請參加者盡量避免被蚊叮咬。

Crocodiles have been seen at the Crab Creek mangroves, so do not go bird watching alone at this location. Ask Chris Hassell for advice before going to the mangroves.

當地紅樹林偶爾有鱷魚出沒，如欲到紅樹林中賞鳥請勿單獨前往，並請先諮詢 Chris Hassell。

You are strongly advised not to walk around bare foot on any grassed or irrigated areas due to the potential presence of hookworm. Always use footwear when outside – flip-flops or thongs will do for casual wear.

草地或出現鉤蟲，強烈建議不應赤腳，在戶外最少該穿上拖鞋。

Travel Insurance 旅遊保險

Overseas visitors are required to have travel insurance. We are in remote areas. Evacuation by air ambulance and possible transfer to a major hospital can be very costly. Australian participants should check that their ambulance cover is appropriate for Western Australia.

海外參加者應購買旅遊保險，因考察的地點離醫院有一段相當距離，保險條款該包括飛機緊急運送服務。

Contacts 緊急聯絡

During the expedition participants can be contacted through BBO 考察期間可以 BBO 為緊急聯絡

Postal Address 地址:

Broome Bird Observatory,
PO Box 1313,
Broome, W.A. 6725.
Australia.

PHONE 電話: +61 8 9193 5600

E-mail 電郵 broome@birdlife.org.au

Mobile phones work at the BBO but can be erratic – you can text all the time but voice calls will depend on weather conditions – reception for calls is about 20-40% of the time but some days there is no reception. A walk along the beach towards Broome often improves reception.

手機訊號在 BBO 範圍內並非常不穩定，基本上在 BBO 範圍內不能使用行動數據，需步行 10-15 分鐘至沙灘才有較穩定的訊號。

In Broome here are many options for email and internet access. In general, reception at BBO is not strong enough for wireless internet but does occasionally work. At Anna Plains there is mobile reception at various places around the station.

在布隆姆市內有些地點(如圖書館)有 WIFI 提供。在 Anna Plains 農場有幾個地點能收到訊號。

If you purchase a sim card for use in Australia it is **strongly recommended that you get a Telstra card** as other options will not work, especially at Anna Plains.

建議使用 Telstra 的 sim 卡，收訊較佳。

Conclusion 總結

It is always a great challenge trying to undertake expeditions during the hotter/wetter season in NW Australia. It is essential that we have a large and experienced team available to cope with the expected conditions. A team of 25-28 people is considered the optimum. Usually half the expedition participants are from outside Australia.

在西北澳炎熱的雨季進行考察是頗具挑戰性的，因此我們需要 25-28 人的團隊去完成項目，通常有半數的參加者是來自海外的。

Previous wader banding or expedition experience is not essential. What is important is the readiness to work hard (when required) and be a contributor to the team. It is a wonderful opportunity to mix with, and learn from, others with different backgrounds and experience.

參加者無須具備環誌經驗，更重要的是勤勞和合群，以幫助團隊完成所需的工作。在考察期間是與來自不同背景和經驗的人士交流的好機會。

Would anyone receiving this “brochure” (sent to recent expedition participants and others who have already expressed interest in coming) please try and indicate, to Clive Minton and Roz Jessop, their likely availability and intentions for 2019 **as soon as possible**. This doesn’t need to be a firm commitment at this stage - just an indication – especially in obtaining an adequate cover throughout the period and in securing appropriate transport etc. So please take action now just to give us an idea. Then in due course, advise Roz Jessop of specific details and travel arrangements.

收到這簡介的人士請盡快向 Clive Minton 或 Roz Jessop 表示是否準備參與 2019 年的考察，這有助我們計劃考察的相關事務。

We hope to see you on NWA2019. 希望在 2019 見到你！

JOINT LEADERS 領袖團隊

<p>Clive Minton, 地址：165 Dalgetty Road, Beaumaris, VIC. 3193. Australia. 電話：+61-3-9589 4901 電郵： mintons@ozemail.com.au</p>	<p>Rosalind Jessop, 電話：+61 427 521 857 電郵： moonbird39@gmail.com</p>	<p>Mike Dawkins 電話：+61 417 314 496 電郵： mike.dawkins@me.com</p>
<p>Chris Hassell, 地址：PO Box 3089, Broome. WA. 6725. Australia. 電話：+61-8-9192 8585 電郵： turnstone@wn.com.au</p>	<p>Prue Wright 電話：+61-404 002 745 電郵： Prue327@gmail.com</p>	<p>Katherine Leung 梁嘉善 電郵： katssoftdrinks@yahoo.com.hk</p>

N.W. Australia 2019 - Locations Schedule

時間表

Saturday 2nd to Sunday 24th February 2019

2019年2月2日(星期六)至24日(星期日)

Date 日期	Tide time 潮汐 時間	Tide Height 潮汐 高度	Location 地點
Saturday 2 February	09:46	7.20	Arrive Broome 抵達布隆姆
Sunday 3 February	10:25	7.80	Travel to 80 Mile Beach 開車往八十里沙灘 (Anna Plains 農場)
Monday 4 February	10:58	8.28	Cannon net 炮網
Tuesday 5 February	11:28	8.65	“
Wednesday 6 February	11:56	8.91	“
Thursday 7 February	12:22	9.06	“
Friday 8 February	12:47	9.14	“
Saturday 9 February	13:12	9.13	“
Sunday 10 February	13:38	9.01	“
Monday 11 February	14:06	8.76	“
Tuesday 12 February	14:35	8.39	“
Wednesday 13 February	15:09	7.91	“
Thursday 14 February	15:55	7.37	“
Friday 15 February	17:28	6.90	Day off 假日
Saturday 16 February	07:26	6.22	Travel to Broome 開車回布隆姆
Sunday 17 February	09:09	6.92	Day off 假日
Monday 18 February	10:02	7.83	Cannon net 炮網
Tuesday 19 February	10:42	8.68	“
Wednesday 20 February	11:20	9.38	“
Thursday 21 February	11:55	9.88	“
Friday 22 February	12:30	10.14	“
Saturday 23 February	13:04	10.14	“
Sunday 24 February	13:37	9.87	Depart Broome 離開

Catching Days: 抓鳥的日數

Broome 布隆姆- 6 天

80 Mile Beach 八十里沙灘- 11 天