

White-bellied Heron International Workshop

1-4 December, 2015: Punakha, Bhutan

Hosted by the Royal Government of Bhutan, Ministry of Agriculture and Forests, Department of Forest and Parks Services in collaboration with the Royal Society for Protection of Nature.

This workshop followed an International White-bellied Heron Species Conservation Planning Workshop which took place in India December 2014.

The workshop had the following objectives:

1. Review 2015 in terms of activities and new information about WBH
2. Provide and share additional technical and background information to integrate into WBH conservation strategies.
3. Refine and obtain commitments to and move toward the formal adoption of the Species Conservation Strategy
4. Identifying constraints to effective implementation; sharing knowledge and skills to collectively overcome these challenges
5. Develop the WBH WG to become an effective body, serving the needs of WBH conservation and those of the range countries and other concerned organisations/individuals
6. Start to explore the role of WBH conservation in the larger conservation landscape

1st December 2015

- **Formal Opening Ceremony conducted by the Royal Government of Bhutan**

2nd December 2015

- 1. Welcome and thanks, introduction to facilitators and participants**

Facilitators:

- Madhu Rao of the Asian Species Action Partnership.
- Mark Stanley Price of the IUCN SSC Species Conservation Planning Sub-Committee.

- 2. Agreement on workshop agenda, purpose and protocols**

- 3. Reviewing 2015: has our knowledge changed?**

The White-bellied Heron Working Group Range State Facilitators each gave an overview presentation of on-going or planned work on White-bellied Heron. More details can be found within their presentations.

Bhutan - Rebecca Pradhan

- Have Identified and agreed a site for captive breeding. Bhutan Trust Fund for Environmental Conservation (BT FEC) has provided some funding towards this and now RSPN are in meetings with Punatsangchhu Hydroelectric Project Authority (PHPA) and the Ministry of Water Resources, River Development and Ganga

Rejuvenation (WAPCOS) to agree in-kind (materials and labour) and financial donations.

- Annual population survey in 2015, count: 28 individual WBH.
- Monitoring with local communities on-going.
- College of Natural Resources (CNR) students x 8 – research varies from vegetation and habitat preferences, forest fires, feeding behaviour and diet and community involvement.
- In process of preparing a Bhutan specific conservation strategy (ongoing).
- Funding from: ICF/Felburn Foundation; GEF small grants; BTFEC and PHPA.
- When monitoring they record the: number of WBH; number of nests; number of eggs laid and hatched and number of chicks fledged.
- Government: An International Bird Festival was held, for which WBH was the focal species. The Wildlife Conservation Division has appointed a focal officer from each district with WBH, per the Assam decisions,
- The captive breeding site has been identified; when RSPN has raised the funds, captive-breeding will be done jointly with the government.

NB: Sometimes the WBH throw away an egg if they have too many so getting the total number of eggs is hard.

Discussion points:

- *WBH sightings around Sunkosh Valley dam were below the dam (x2).*
- *Drones, satellite imaging and tagging chicks could be useful methodology.*
- *The general conservation funding strategy is flawed, we need long-term plans and funding for WBH - 50 years plus.*

China - Han Lianxian

- Work in China in 2014 was focused on rapid habitat surveys of west and northwest Yunnan Province, awareness raising workshops and interviews with local people. No presence of WBH was confirmed as of yet.
- Looked at: Dulongjiang; Lushui; Tengchong and Yingjiang.
- Concluded that lower parts of west Yunnan in China are very unlikely heron habitat. The upper Shweli River and Nanwan River are unlikely due to high human population and dirty waters.
- Potential areas are: Pianma Tengchong area (south); Zhina-Sudian area and Dulongjiang (north Yunnan).
- Taiping River in Yingjiang County – Zhina area contains potentially suitable habitat.
- Upper Taiping River branches have potential habitat but not on the mainstream as there are 3-4 dams.
- Most likely area includes area where seen in 2014 near the border between China and Myanmar.
- Mingguang River landscape looks like suitable habitat.
- Little River could be a potential site.
- Result of awareness raising workshops – Tengchong Nature Reserve staff said they would mobilise staff for > 100 community rangers to come to workshop to raise awareness.
- Salween River at 860 m a.s.l but no WBH found.
- Pianma V-shape mountain pass possible migration route.
- 2014 capture site was: 2,011 m a.s.l altitude near a mine, in a very polluted area. Revelation that a sub-adult dispersal range can be around 2,000 m a.s.l in Biluo Snow Mountain. The captive sighting was just 40km from Myanmar.

- Dulong River (1190 m) – only 36.5km from WBH site in Nawngmung area and 60km from WBH in Myanmar. However, hunting practices are changing from cross-bow hunting BUT habitat seems suitable.
- Zhubalong River (east of Salween and Mekong) – looks similar river- wise but location seems unlikely.
- Nun Mung, Myanmar – April to July (rainy season only present as not found in other surveys), this is possibly a breeding site.
- Zhubalong River in Tibet looks like it might be the best habitat for WBH (and most similar to Bhutan) but the location is difficult to go to.

Challenges in China:

- Most potential areas for WBH are not protected, though some fish are protected (not regularly policed though).
- Most altitude ranges from 1,100-2,100 m a.s.l.
- Areas that WBH may live are unlikely to be visited by birders or scientists.
- Territory/political issues make it difficult to survey in some areas. Hwr new roads will open up access to Tibet.
- China, Tibet and India relations make visiting some areas difficult.

Discussion points:

- *Rebecca suggested that some of the habitat looks appropriate.*
- *Should we look in higher altitude in China or stick to known altitude as found in Bhutan? China feels worth exploring other areas.*
- *Can we deduce anything from the sightings of juveniles in India and China?*
- *Should we look in higher altitude in China or stick to known altitude as found in Bhutan?*
- *Don't have knowledge about how far they can fly.*
- *They are not very good at flying long distances.*
- *Each country has differences in their genetic make-up.*
- *May be moving due to weather.*
- *Likely that WBHs will move if necessary to find more suitable habitat; is possible that juvenile birds that have been sighted are in sub-optimal habitat due to lack of good habitat but no reason to assume they will not disperse over long distances.*
- *Not necessarily reasonable to assume there is a lack of good habitat - birds undergo a period of wandering which can last weeks, even months, this helps them learn about the landscape. As wetland habitats are naturally unstable, wetland birds need to understand different habitats.*
- *Are they migrating?*
- *May be weather dependant – rain, wind, flood etc.*
- *Bad weather could be a limiting factor.*
- *Genetic research shows that they might be going to other areas to breed because genetic diversity is fairly good.*
- *The related Grey-billed heron, living on islands in SE Asia is a wide disperser, over the sea and through storms.*

India- Sarala Khaling

- Priority for India's action plan is to do more surveys, especially for Arunachal Pradesh.
- Meeting with all Indian colleagues involved in WBH was completed in Sept 2015.

Tajum Yomcha:

- Three surveys conducted in the west of Arunachal Pradesh to explore presence/absence of WBH on Ziding Kho River & tributaries (April, August and Nov) –no sightings.
- Distributed handouts to local communities to report any sightings.
- Infrastructure development in the area is quite high.
- Future activities: do more surveys (Rufford small grants proposal in process) where historical sightings have been recorded (e.g. Tippi & Bhalukpong) and more detailed surveys in the Kameng River.

Gopinathan Maheswaren & Himadri Sekhar:

- Research into the foraging of the WBH (how often and how long).
- Collected new data in Oct 2015.
- WBH seen in streams around the main river, same as black storks.
- Second nest seen in 2015 in Namdapha – visited after 10 days and whole nest had fallen down due to a storm so collected nest material.
- Estimates just four pairs (8) in Namdapha.
- Have observed people in the protected area with guns.

Rajul Islari (UFCN) And Arnab Bose (Nature's Foster):

- Continuing work with Heron Guardians and advocating for “no go zones”.
- Six sightings reported by local communities (six separate occasions).
- One juvenile WBH was reported by villagers to have come to village with ducks. They did not kill it because of the awareness raising work.
- Created two no go zones in Phibsu and Choki. Signs up but not yet official.
- Picnic parties restricted to 2 km away from Northern boundary.

New sighting in Maguri Bill in Tinsukhia, India of juvenile WBH by bird watcher (Gautam Bhattacharya). This is an area that is disturbed by human activities – cattle, fishing, tourism etc. Not seen since despite high profile and subsequent visits, possibly what scared it away.

Discussion points:

- *Distance from Maguri bill to known breeding sites? possible it came from Southern Myanmar which is less than 100km away.*
- *Difference between juvenile and adult bird: adults do not have any white spots in their wings, adults are all grey but it is hard to tell.*
- *Involving more amateur bird watchers could be useful for presence/absence data: e-bird of Indian biodiversity portal (Atree coordinates).*
- *Someone need to search photography forums online.*
- *Otter SG are creating a reporting mechanism online which we could consider sharing for overlapping/similar habitat*
- *BirdFair project applied for by Nature's Foster.*
- *India needs to work on moving WBH from Schedule 4 to Schedule 1 but current focus is on large mammals and will take a lot of work. This group might help by collective recommendation to government of India and that this could be a possible output of the meeting.*
- *Sikkim's last recorded WBH was 1952 and now has dams.*
- *Baska Tiger Reserve has similar landscape to Manas and therefore might be a good survey area.*
- *A consistent protocol for surveying/data collection would be useful across the different states in India and potentially range-wide.*

Myanmar - Than Zaw

- Provided an overview of the possible areas for future WBH survey.

The following was presented:

- WCS Myanmar were unable to do any WBH activities during 2015 due to political instabilities.
- They hope that the GEF funding (>\$4 million) already secured: 2015-2020, will enable them to include work on WBH in the northern forest complex area.
- The IUCN Integrated Tiger and Habitat Conservation programme has just been received and will cover western HVWS surveys.
- The Natural World Heritage Sites, UNESCO grant will cover the northern mountain forest complex, including Hkakaborazi National Park.
- The USFWS grant for Gibbon work, covers parts of Hukaung Valley Wildlife Sanctuary (HVWS) and Bumhpabum WS.
- Challenges: political instability making areas unsafe, inaccessibility due to poor roads/access routes and the need to acquire permits to visit the sites, poor law enforcement and low penalties for contravening law (only a \$40 fine for killing protected WBH), insufficient staff (43 Protected Areas but the government cannot staff all these areas, at least 2 have no staff at all), lack of conservation knowledge and weak systematic biological threat monitoring system, 43 PAs in Myanmar but only 24 staff for Hkakaborazi and 26 HVWS, political instability especially bad in HVWS. Hope that the new political party (75% win) will reduce conflict therefore making it easier to access sites.
- White-bellied Heron were recorded in three places along Tanai River in HVWS in Jan 2016 (after the workshop), possibly new birds.

Discussion points:

- *2005 sighting by Eames of WBH in area where the forest is now gone and is now a sugar cane plantation.*
- *Asked to clarify if Myanmar is thought to be a breeding ground or dispersal area – this is uncertain. But from sightings in certain months it could be thought that Myanmar location is close enough to China for dispersal.*

Summary of country talks: Mark Stanley Price

- India – has been doing survey but seen no new sightings except one juvenile in Maguri Bill, Assam. Have also got a lot of data on behaviour.
- China – a lot of work on potential habitat and awareness raising, though not seen any WBH but some of the habitat looks viable.
- Myanmar – hard because of inaccessibility and political tensions to carry out surveys but have a lot of grant money.
- Bhutan – 28 herons most recent count, with 10 fledged. Also a lot of work being carried out by students.

What is new/ changed since last year?

What we still do not know:

- Generation length: not known but RSPN feels could know more in 2 yrs or so. Suggested that it's likely longevity is about 10yrs based on similar species.
- Sex ratio in the wild – not known.
- Age at first breeding – not known.

- Still difficulties ageing WBH/telling apart birds that are less than 6 months vs full adults.

What have we learnt?

- Bhutan seems to have a productive population having had 10 fledged birds from 5 pairs.
- There is a lot of development in the areas where WBH are found in Bhutan.
- China has some viable habitat suggesting there may be WBH, or WBH crossing into China, even if the population is very small.
- There is some evidence of an on-going decline in Myanmar (Hukaung Valley) and no breeding birds have been identified.
- India – has unexplored areas with WBH potential.
- India has breeding birds but nests seen have so far failed.

4. Threats to WBH

Overhead Cables – Gemma Goodman on behalf of Joao Paula Silva

- Main problems with power lines: Collision and electrocution, the latter a bigger issue for WBH (based on RSPN data).
- Types of powerlines include: high tension lines which distributed energy to cities and from power plants (are transmission lines); medium tension - small towns (distribution) and low tension for villages and within towns (distribution).
- Collision happens with all types of power lines.
- Electrocution happens mainly with medium power lines.
- We don't have information about the number of collisions of WBH but WBH have been found electrocuted (x10 by RSPN 2008-2015).
- Mitigation:
 - o Gather more (continue to gather) data to demonstrate impacts.
 - o For medium tension powerlines: insulate power lines where near WBH and flight paths, and fit cables with flight diverters and insulate cables. New ones should be routed away from nesting areas.
 - o For new transmission lines: route lines away from WBH habitat, flight paths etc. and line mark if they can't be routed away.

Discussion points:

- *There are enough cases to take the precautionary principle.*
- *Could consider putting new power lines underground, this was done for the black-necked crane.*
- *Working with the power company to discuss the position of the power cables is key - better to put them in the forests rather than along the river.*
- *Needs proactive approach with companies about future developments as cannot change easily once they have been built.*
- *In Wyoming, USA they installed solar powered flight diverters to stop collisions of the trumpeter swan. It was very successful. Thinks it should be done in Bhutan.*
- *In Bhutan the power companies can be informed.*
- *This could be an outcome of the workshop that we try to get flight diverters on power lines.*
- *Bhutan things will be quite hard but agree that we should have concrete plan for power lines.*

- *You can even use experimental ones/ homemade - as long as very visible and spin – these are the most important.*

Dams – Samir Mehta

Impacts of dams:

- Nutrients and sediment gets trapped behind dams, which changes the downstream ecology.
- Peak Power – dams only run during peak hours, meaning that they hold back water for 18-20 hours/day at low use, then release all in one go causing drought/flood situation on a daily basis.
- Bhutan has plans for 30,000 MW, pledging 10,000 MW to India.
- In Bhutan the flow is 10% of lean season flow during off peak –this is not enough to support the ecosystems downstream. Would recommend increased e-flows (releases of water based on previously dammed timings and amounts) could do so based on WBH occurrence.
- Trans-boundary impacts are not really known. However, they are a treaty obligation, backed up by International Law.
- Constitutional right that plans are in public domain.
- Recommendations: information in the public domain; precautionary principles applied; holistic river basin planning and trans-boundary cumulative impacts assessment and only then proceed.

Discussion points:

- *What about ponds to release water during off-peak? Expensive.*
- *In Bhutan e-flows at 10% is regulatory but not blanket.*
- *Questions around if National Environment Commission gives any figures on releases.*
- *Impacts on Manas not yet known – need to consider monsoon effects.*

Hunting, persecution and disturbance an overview – Will Duckworth

- Hunting occurs for food, meds, ornamental purposes, perceived threat (such as threat to fisher livelihood) or for captive specimens etc.
- Low WBH numbers (plus slow life history) means any hunting will have significant impact.
- Proving hunting though incidental observations will be hard but satellite tracking would tell us more.
- WBH at high risk of disturbance because of human use of habitat.
- Usually if the threat of killing is removed, larger species become less shy – would apply to WBH (e.g. look at grey herons in UK, once shot with pellet guns etc. caused shyness, now much less shy).
- No go zones help.
- Conclusion – likely hunting and disturbance is a serious threat.

Discussion points:

- *WBH response to human presence are very inconsistent.*
- *Hunting varies largely between range states and even different areas.*
- *General agreement that satellite transmitters would help understanding.*
- *In HVWS, Myanmar, people looking for gold, will live off natural resources entirely so hunting is likely an issue.*
- *India – no evidence of it being a big issue in Arunachal Pradesh.*
- *Being shy can reduce productivity (breeding and feeding).*

- *If shyness is recorded in WBH in certain areas versus an area where hunting is low (Bhutan) it might indicate that hunting is a serious problem.*
- *In absence of data we can draw parallels with other large water birds.*
- *We can be proactive in preventing hunting in key areas where hunting is more common.*
- *Are there any recorded instances of trade of WBH in Bhutan? no but there are examples of other birds in SE Asia although currently not very high.*

Climate Change – Mark Stanley Price

- Much warmer than average (Jan-Aug, 2015) in WBH habitat.
- Predictions of CC in 2030 – between 1.4 and 1.6 degrees C. 2050 – more than 2 degrees C warmer and more extreme in north of habitat (ca. 3.3).
- IPCC – whole Asian range: 3 degrees C increase across region.
- Vulnerability index – exposure, sensitivity and adaptation.
- Assessment of sensitivity of WBH to CC; its adaptability and exposure to CC. Found WBH to be “potential persister” in face of CC.
- Use usual management planning strategy.
- Still need to be wary of climate change impacts, especially on habitat.
- Monitoring required to ensure assumptions about insensitivity are realised in practice.

Discussion points

- *How do we put CC into wider planning?*
- *Will tree line shift have an impact? Not known.*
- *More work needed to ensure not sensitive.*

Discussion on all threats (beyond those discussed above and as outlined in the strategy)

Discussion points:

- *India: Political pressures are important in Western Arunachal Pradesh as in the last 6-8months they have not been able to enter the forest due to army activity, though this also means that fishermen are unable to enter which could be a positive.*
- *Cattle movement has added pressure as they leave the cattle in the forest. The cows contaminate the water and this could become more of an issue.*
- *India: Habitat alteration in Namdapha is on-going but there are no known dam plans.*
- *Bhutan: Lake Ada – is a pond where a pair of WBH have been observed feeding at the run-off area (slightly moving water). The water is very clean at this pond. Could consider conducting a study to understand if man-made sites for herons could work more broadly?*
- *Bhutan: there are birds that disappear and we don't know where they go, it is possible there's some hunting in other areas or at least human driven loss.*
- *Bhutan: nesting sites are often close to human habitation (often only 300-500m away from people).*

Nesting info

- *Nesting - sometimes birds change nest site, other pairs return which might mean adult mortality is fairly low.*
- *Nests are at least 150m apart but don't see fighting between breeding pairs.*

4. Head starting and captive breeding – George Archibald, Cathy King and Rebecca Pradhan leading discussions

- Head Starting is defined here as taking eggs from the wild and raising them, then releasing.
- Captive Breeding is keeping animals in captivity indefinitely so they can produce lots of eggs and chicks.
- This initiative is about captive-breeding and establishing a long-term captive population, because Bhutan is changing so fast.
- Bhutan as initial focal country, where largest known population of WBH resides.
- Potentially in the future, WBH could be released in other range states.
- Another reason in Bhutan is that with all new dams and their impacts, not sure what will happen to existing wild populations.
- Herons not hard to breed in captivity generally (e.g. Goliath's; Blue Heron), not too prone to disease, not choosy with partner and once they fledge they are fish-catching ready. Also are more instinctive with fishing and other behaviours (like grey herons). San Diego Zoo successfully bred blue heron in captivity.
- George has experience in captive breeding with another species of heron.
- Biggest challenges will be expense and personnel (esp. ensuring LT staff consistency).
- Double clutching might be possible (if take egg at 1 week to 10 days old).
- CB will help with filling knowledge gaps.
- Can learn from white-backed vulture work in India - they faced some hostility from local communities over harvesting eggs for captive breeding, as they were very possessive over the birds and did not want the eggs collected. Hwr the vultures often lay a second clutch after collection of the first.

First attempt, Rebecca Pradhan

- Unfortunately couldn't test viability of WBH eggs due to thickness of shell.
- Lifted egg from nest one week before hatching.
- First time tried to do this, took two eggs and predator came down to eat the egg.
- 15 days to set up everything.
- Every two-hours chick was checked.
- Humidity was a key issue.
- WBH naturally fledge at 71-73 days but had to keep it longer, up to 134 days before release.
- First day of release – bird came back to get food and they did feed him but eventually he flew to the artificial pond that was set-up and was fishing for himself.
- Hydro company in support.

Future:

- Rebecca wants to start with just one pair
- Rebecca suggests we collect a clutch from a different pair each year.
- George proposes a plateau site just downstream of the dam, to hold 4-5 breeding pairs and including a Visitor Centre. The reasons for this are 1/ safety of the population, 2/ reintroduction scope, 3/ scope for international collaboration, for repatriation or release.
- 25-acre site identified with land registry in process. Area is where the Punatshang Chhu meets the Chachev Chhu.
- Building plans are drafted.
- Likely donations from dam companies – PHPA.

- Some financial backing already secured.
- Government willing to provide human resources.
- Government committed to doing this with RSPN.
- Expect will take between 1-2 years to build everything and be ready for animals.
- Plan to start early 2016.
- Need more natural ecological studies to understand requirements first.

Reservations:

- Not a natural course of nature.
- Risk of impacting wild populations.
- If happening, need to do it sooner rather than later.
- Concern about lifting the eggs.
- Concern about timings.
- Wild bird population should still be a priority.
- Death upon release very likely but if count remains similar to higher then still worthwhile.
- What is genetic diversity like? Did each valley have its own population, that was possibly connected to India? Genetic diversity is quite good!

Other:

- *WBH usually stop flying around 9pm latest.*
- *The industrial site of Puna is 20 km distant and in the middle of most important habitat, but the impacts are unknown.*

5. Survey and Monitoring tools and techniques

Introduction – Simon Mahood

- Survey defined as: a systematic process collecting data on distribution and/or habitat preferences.
- Monitoring defined as: tracking population change over time.
- Study defined as: new and specific discoveries about ecology or behaviour.

Why do this?

- to understand: Population size; habitat preferences; why they are not found in areas of superficially suitable habitat.

What's important?

- Selection of survey sites and consistency of method.

Country Survey Techniques

Survey techniques used thus far were discussed and presented by range states: Bhutan, Myanmar and India. More details are available in the presentations.

Bhutan – Rebecca Pradhan

- Three types of survey include: 1) Presence/absence (p/a) 2) survey same site in all four seasons for p/a 3) Further research where WBH previously identified
- Data collected: area/river; GPS coordinates; altitude; date; veg type; land use type;
- In December you can still just about ID which are juveniles and therefore survival but still very hard.
- In Feb rivers start to recede so the juveniles and breeding pairs tend to come to bigger rivers which makes surveys easier.
- Surveys from 6am-6pm.

- Also local people know to call RSPN if WBH is sighted (some false sightings).
- Surveys are not done below 1,500m but local people still know about the bird and to call if they see them.

Discussion points:

- *A more systematic system for surveying river features could be useful.*
- *It can be easy to determine foraging spots but not how many birds.*
- *What about turbidity and gradient of the river? Not recorded but RSPN records depth and substrate and finds that **they are always less than knee depth.***
- *Comment from India – when water is murky after the rains, the WBH go to the edge of the river where it is a bit clearer.*
- *What about other areas of Bhutan – eastern Bhutan is the fish supply adequate there? RSPN- yes there are adequate fish BUT there is a lack of other water birds as well as WBH.*
- *RSPN think WBH eat all fishes, smaller ones when juvenile, then less particular as they get older.*
- *Detailed survey on Bhutan's fish stocks would be useful.*
- *Study on feeding behavior and dietary composition of WBH along the Puna-tshangchu basin will be undertaken by CNR student.*
- *Would it be useful if unknown or little-visited areas were now checked out?*

India – Sarala Khaling

Three levels of surveying and monitoring happening in India:

- Preliminary in Namdapha (by Tajum) – surveying based on **historical records** from birders, forestry officers and others. Preliminary efforts have involved walking along rivers, showing image of WBH to local people to ask if they have seen bird.
- Monitoring in Manas biosphere reserve area (by Arnab *et al.*)- In 2010 they did 12 transects to do monitoring, A tree used streams where Natures Fosters had done work – did presence, absence; vegetation; river characteristics; crude measurements of turbidity and depth (transects: 3-20km plus did 20x20 vegetation plots); only in one transect of three were WBH recorded – concluded might have been Bhutan birds that visiting.
- In-depth study in Namdapha (by Mahes *et al.*) –looked at historical data first; interviewed local people; looked at all potential sites (presence/absence); did repeat surveys; questionnaire survey (as did for black necked stork). Requires/d dedicated team. Publications useful to increase awareness even if anecdotal.
- Foraging data: mode of prey capture (tactile or visual, WBH not tactile); water depth at foraging site; number of foraging attempts, number of fish caught, size of fish and handling time per 15 mins. ID individuals via height and wing pattern through venation of wings.
- Works with Mondal and 4 field assistants for 2yrs – when rain comes must leave and cannot continue survey work, plus takes 7 days to get in and out. Cannot get closer than 500m and record data 6am-6pm.
- Focus on foraging ecology not on community awareness despite local people here mostly being hunters (migrants from China). Hwr they might not have capacity to hunt as they go through the area, often overloaded and focused on fishing.
- No permission to take fish specimens out of park to analyse so instead took fish from villages and measured length and width of fish to identify fish species.

Discussion:

- **Quarry's –permissions granted in Namdapha**
- *WBH (from these in-depth study observations) are solitary and territorial.*

- *Nepal should also look into doing presence/absence data.*
- **Social media tools** could be used to increase awareness and get sightings.
- *Mark recapture techniques would be useful but need permission in India (unlikely)*

Myanmar – Than Zaw

- WBH work: 2009 to 2011, after which political unrest became an issue and some areas have been inaccessible since 2011.
- Began by selecting historical sites and then habitat that appeared suitable.
- Studied six sites in N Myanmar via boat surveys, found WBH in 2 – HVWS and Hpokanrazi WS (of which about 75% of the latter was surveyed) (16 WBH total).
- Found further 7 in other areas.
- Count: 23 WBH.
- WBH recorded at altitudinal range – 149-1,532 m.
- In 2009 did behavioural study in Hukaung Valley where WBH visited regularly, using N American heron behavioural classification method (Kushlan, 1976). Found WBH mostly use stand and wait feeding method.

Discussion points:

- *Surveying with boats could be an issue if WBH are shy. May mean they are in smaller streams. For example there is one camera trap record of WBH on a small stream, so potentially lots in the hundreds of streams that are present where boat surveying wouldn't work.*
- *How do you avoid double counting and get an accurate count?*
- *Observed difference between the countries: In Bhutan, they have large teams and can communicate with each other. Each person has their own bird to watch. In India they walk up the river and stay with that one individual. In Myanmar much harder as areas are very large.*

China – Han Lianxian

- Does not have surveying techniques to report as just one bird found in captivity.
- Habitat identification has been the first step. As well as raising awareness of park rangers and doing interviews with local people and showing them the birds' photo and identification guide.
- Any recordings should have place name, date and time. Coordinates, altitude, habitat types, area, types (PA or not), water quality, existence of dams or other threat.
- Suggest paying attention to birds with similar diet - to see what competition WBH might have.

Questions for Discussion (report back on 3rd Dec)

The following questions were posed to the group, each range state forming a breakout group.

1. Are you happy with your survey/monitoring methodology?
2. Is there anything that you've heard today about how other countries are working, which makes you want to change something about your method?
3. What additional support do you need to improve your survey/monitoring methodology?
4. Is it useful to have a common approach either within or between countries?
5. Is it useful to have a common place to store and share data? (within and between countries)
6. Is it useful to explore areas where there are no historical records further (or beyond where we are currently focusing)?

7. How important is it to get a better estimate of WBH numbers?

Comments:

Drones: \$7,000 each, very difficult to use, were not effective at this time. There are more options these days that are modern and cheaper.

3rd December 2015

1. Report back on survey questions

1. Are you happy with your survey/monitoring methodology?
 - *Bhutan: Yes, its based on experience*
 - *India: presence/absence is appropriate for India at this time but need to improve repeat surveys and do more.*
 - *Myanmar: yes but want to learn more.*
 - *China: yes.*

2. Is there anything that you've heard today about how other countries are working, which makes you want to change something about your method?
 - *Bhutan: No.*
 - *India: Yes, look more at habitat characteristics - turbidity, depth, gradient of the river, water temperature, flow (speed) and fish diversity.*
 - *Myanmar: yes.*

3. What additional support do you need to improve your survey/monitoring methodology?
 - *Bhutan: more training, tools/equipment, longer-term funding/support*
 - *India: connections to funding agencies/opportunities and resources for surveys.*
 - *Myanmar: no as WCS have a senior advisor and a technician who have expertise in bird survey/monitoring.*
 - *China: hard to get financial support while no evidence of WBH.*

4. Is it useful to have a common approach either within or between countries?
 - *Bhutan: yes.*
 - *India: yes within a country and in transboundary landscapes (like Manas) as methodologies will depend on country.*
 - *Myanmar: yes both within and between.*

5. Is it useful to have a common place to store and share data? (within and between countries)
 - *Bhutan: yes within Bhutan. Already have a system which is accessible to all those using it.*
 - *India: yes.*
 - *Myanmar: yes a shared database would be good.*

6. Is it useful to explore areas where there are no historical records further (or beyond where we are currently focusing)?
 - *Bhutan: Yes, this is an on-going process.*

- *India: yes but still use historical data to prioritize. However there are many areas with clean water and good habitat that have not been checked.*
 - *Myanmar: very many? as have found WBH in areas without historical records already.*
7. How important is it to get a better estimate of WBH numbers?
- *Bhutan: Very*
 - *India: Very*
 - *Myanmar: very*
 - *China: very as once get some evidence of WBH in China will get other support to act.*

Discussion points/comments:

- *Bhutan's methodologies should be more transparent and scientifically/rigorous. ID on individual level to avoid double counting and increase the reliability would be good, could use– unique identifiers – bill length, markings etc.*
- *Ideally want a reliable total count for Bhutan.*
- *Could use coloured leg bands, put on chicks before fledging. Risk of abandonment of chicks but technical support can be provided.*
- *More systematic recording of habitat features for all would be useful: could ask ppl to photograph each WBH seen across all range countries to collect habitat data on heron sightings and also to try and ID difference between adults/juveniles.*
- *Global estimates are officially at 200-249 individuals but only 60 are known.*
- *Question over whether it is worth getting a total count when it won't change how we behave as we know it will be low whatever. Agreement on this by one person stating it is clear there is range retraction and numbers are low enough to merit conservation effort.*
- *Every dollar spent should be used to save the bird, i.e. action focused. Others say it is necessary to have a proper count for wider buy-in, certainty etc. For example WBH are not included on the Chinese top endangered species list as there is not enough information, they want empirical evidence.*
- *Re common approaches to research – acknowledgement that a uniform approach in each country would be difficult due to different size habitats, accessibility, regulations, capacity etc.*
- *The Working Group could help prioritise areas that are not/little explored but have potential habitat.*
- *India WBH: Many forest officials and forest dwellers do not even know about WBH. Need to grow awareness.*
- *India – security issues within Manas.*
- *Cautions against drones- they have been problems in the past so to go very slowly if they do use it.*

2. Monitoring and Surveying Summary - Simon Mahood

- Photograph every heron that they see, and its habitat, as it would help with gathering info on habitat
- All countries except Myanmar asked for help with funding, Bhutan would like training and technical support.
- Need to work out how to create a central database – all countries would like this.

Discussion

- *Every bit of money spent must be on saving the species, not refining estimates of population size.*
- *Others argued that this is important to get government and funders on board and that living with uncertainty is uncomfortable.*

3. Reflections on yesterday (3rd Dec) - Gemma Goodman

- Highlighted the possible significance of juvenile dispersal and the gap in knowledge about where WBH go in Bhutan.
- Challenges and threats clearly differ in all range states: Myanmar needs to understand if or if not, why are they not got nesting birds. Access to areas that have been off limits needs to improve to do this; for Bhutan captive breeding and continued monitoring is the focus, refining identification of individuals through natural markings or leg bands could help; Indian needs a better understanding of WBH distribution and China need to know what makes suitable habitat to find where WBH is most likely to be. Nepal should be looked into further- especially its historical records and learning why WBH was lost.
- Hunting – behaviour is an adaption to external influences so hunting could be a real issue and need to understand more – transmitters can help.
- Satellite transmitters will also help better understand distribution and dispersal and answer many of the remaining questions.
- The threat from powerlines needs addressing – flight diverters relatively easy step, also need engagement with developers.
- Uplisting of WBH in India from Schedule 4 to 1 was identified as important.
- Proving its presence in China would be an important step to getting funding, attention and listing of the species.
- Largely agree that captive breeding is a necessary next step.
- Social media/citizen science should be used more to id sightings and promote reporting of sightings.
- Didn't manage to pin down how we can plan for climate change in our conservation activities but know it needs to be on our radar.
- Long-term support is essential.

Discussion points:

- *Possible to make an IUCN resolution about WBH at the next WCC, to follow on the ASAP Resolution in 2012 WCC at Jeju.*
- *There may be a need to prioritise satellite tagging before before we do captive breeding to understand where juveniles are going before any captive bred specimens are released.*
- *Learn from the One Plan approach.*

4. Fish Fauna of the Himalayas

Threats and Challenges – Dr Johnson

- Himalayan stream/river ecology: cold, high velocity/high gradient, rich in oxygen, nutrient poor, low primary production (mostly from benthic communities), primary consumers mainly benthic inverts, fish mainly rheophilic.
- Primary inputs are allochthonous
- Cypriniformes are the dominant group but highly diverse.
- Snow trout – common in Himalayan range (200-2,000 m asl in India), as they like fast flowing stream habitat.

- WBH eat stone suckers sometimes (in image from Mahes).
- Brown trout introduced in India but restocked in India and like fast flowing waters.
- Probable fishes consumed by WBH: stone sucker, snow trout, danio, brown trout, golden mahseer, barils and black mahseer. If get droppings of heron, the scales can be identified to ID the fish species (even without calcareous materials). This will help to narrow down areas of available habitat. Can help think of restocking, artificial feeding and WBH appropriate areas.

Threats:

- Hydro dams – run of river – downstream areas substrate will alter. Food for fishes will therefore be impacted.
- Riparian vegetation - removal of river bank will also be impacted by dams. During monsoon, will get more siltation downstream.
- Sand mining – remove top layer of soil will impact recycling of leaf litter processing.
- Eutrophication can happen = reduced oxygen and can cause increased pollutant outputs.

Discussion points:

- *Knowing the river attributes (temp, turbidity, conductivity etc.) of WBH presence will help to identify the fish found.*

Fish diversity and fish conservation in Bhutan – Dr Gurung

Impacts of Hydropower:

- Landslides can block rivers – causing sediment release and changing fauna, killing fish. Glacial lake outbursts are an issue.
- Climate change: 0.02 degrees C increase in temp per year, monsoons are increasing (7-17%), rainfall is more erratic, there's a decrease in snowfall by 7% which impacts directly on glaciers. Wetlands are the first ecosystem to be impacted.
- Mega dams – on average take about about 8yrs to complete; cost +90% of projected costs; PHP1 original costs USD 35 billion already 93 billion and estimated surpassing >100.
- Dams – e-flows and floods patterns disturbed, environmental clues for spawning, migration etc. all disturbed.
- Fish ladders for any dams > 10m are useless.
- Habitat loss and fragmentation – migration loss, population isolation, siltation, altered flood plains.
- Some senior foresters claim Bhutan does not have glacier fed rivers.
- 109 fish species in Bhutan; 11 introduced species throughout Bhutan - includes tilapia; African catfish; brown trout etc. Some of these are highly carnivorous and impacting local species, some evidence that they are eating natives. The EN native *Tor putitora* used to be caught up to 54kgs now rarely bigger than 7-8kgs.
- One idea is to have local farmers to stock *Oncorhynchus mykiss* for aquaculture in Bhutan – this will be very bad.

Discussion points:

- *Discussions with fishery departments to address issue of introductions is important.*
- *It will take approximately 20 yrs for fish population to decline to a level that will impact WBH and be obvious to us so we should look at creating hatchery's for native species so we can re-stock. Promotions of hatcheries in Bhutan is on-going but needs to be accelerated.*
- *Community based river basin management already in process. WWF supporting project on integrated river basin management. Fish ladders – accept flaws in this and*

that this could also be used as opportunity that fish are caught there. Need policy involvement.

- *Bigger fish prefer deeper water, which is disappearing.*

5. Toward concrete actions – Will Duckworth

- We still have gaps in our knowledge on what the key threats are. We must know why the bird is declining, and has been for the last 100 years.
- Rapidly changing situation/landscape, hard to work out where the WBH can/will go.
- Undiscovered WBH populations – can't take into account WBH needs in terms of dams if don't know they are there.
- Slender billed curlew in UK – analogous to WBH. It declined dramatically and action was too late because critical research was delayed.
- WBH – we have time but now it is **URGENT**.
- We need to understand what has to be done to conserve WBH – front-on rather than adding a little by little.
- Visionary ideas necessary to save the species.
- We need more information - this is key and it has to be generated in a way that changes the decisions we are making and the management of the species. We need to ID exactly what we need to know to **conserve** the species.
- Mobilising technical support, increasing financial resources, will be important.

Discussion points:

- *Might be already be at end point of range contraction.*
- *Decision-making about conservation interventions is very difficult.*

6. Successful Chinese Bird Conservation Projects – Han Lianxian

Case 1 – Crested Ibis

- Very important to Japan.
- Was once widespread in Japan, China, Korea and Russia.
- It became extinct in Russia (in 1963) and Korea (in 1978), China 1964.
- In 1972, Japan asked for China's help to find the bird which rebuilt diplomatic relationship.
- 14 provinces in China before 1930s, in 50s in two provinces and none seen by 1964.
- Captive breeding of last remaining 5 individuals failed in Japan, last one native to Japan died in 1995.
- They provided cash reward for sightings by villagers but this resulted in many wrong clues.
- In 1981, they found 7+7 birds in Shaanxi Province at 1200-1400 m. asl, in contrast to where they were expected (<500m.)
- A lot of resources and money has been put into this project because of the importance of the bird to china and especially Japan.
 - o Laws have been implemented and last year they were sentenced to jail (one person for 9yrs and another for 6yrs).
 - o Also awareness through drama, comic, dance etc.
- To stop snakes eating the young they put umbrella type structures to stop the snakes being able to get up the trees with nests in them.
- Went from just 14 individuals in China to nearly 2,000 by 2010 and from one location to 10 and this is continuing to grow.

Case 2 – Black-necked crane

- The cranes winter in china.

- In 1980s the total population was thought to be below 2,000 individuals.
- The Chinese created reserves in these areas so more accessible to the birds, also do supplementary feeding which reduces mortality rate
- They connect with all researchers to update on the conservation status of the bird.
- There are many photographers interested in the species.
- Used dance, publications to raise awareness and mass-scale awareness raising - taxis and buses painted with the crane.
- There are laws protecting the crane (first class protected species).
- Also many resources put into the crane research – over 1,000 papers on this one species.
- The size and beauty of the crane has helped its conservation.

Case 3 – Chinese Merganser

- EN at < 2,200 breeding pairs.
- Most birds wintering in central and southern china in Yangtze river catchment – many of these habitats are very polluted or lost due to development in recent years, fish populations were depleted and the population is scattered.
- This species acts as indicator species – due to preference for fast-flowing rivers.
- Info about the wintering sites was poorly known.
- This project relied heavily on citizen science - Chinese Bird Watching Societies Network organised a two-day survey involving 45 bird watching societies and 200 sites. Found 441 birds, 19 provinces, including in different habitats.
- Again photographers have taken many photos and raised the profile

6. Species Conservation Strategy – Mark Stanley Price

Break out group tasks:

To identify and detail the top five critical conservation actions for WBH in 2016 across its entire range.

Four groups (random composition or in each range country?) with a facilitator, note-taker, reporter, time-keeper to address the below for each of their five top identified actions.

For each Action, where possible identify:

1. What is going to be done?
2. Who will do it?
3. When it will be done?
4. What are the indicators to demonstrate progress?
5. What resources will be needed (money and skills)?
6. What resources exist?

Consider:

- We are dealing with uncertainty.
- Need to think about all the threats and how they interact.
- Need to deal with the unknowns.
- Trade-offs in effectiveness of money spent on WBH.

Group 1 priorities:

1. Country level status surveys.
2. Research on dispersal and mortality – radio transmitters and coloured bands.
Heron SG/WG to coordinate.

3. Feeding, food preferences, & habitat requirements.
4. Awareness programme (especially outside Bhutan) – create information docs/outreach that connects directly with the communities.
5. Start process of up-listing to higher legal status in all RSs.

Discussion points:

- *Unable to get tracking techniques going in India as permissions would be lacking and numbers of individuals are too low.*
- *We should try to elevate to Schedule 1 species in India. This process should start asap*
- *In India we should be educating the government of the importance of WBH and raising awareness, then we should educate forestry officials and security forces etc.*

Group 2 priorities:

1. Survey known and unknown habitats – mapping and survey;
Monitoring movements – satellite tracking (UWICE in Bhutan).
2. Create awareness at different levels (community level – government officials) – creating belonging by developing networks. Initially start with definite habitats, then go to potential habitats.
3. Upgrade to top level status.
4. Financial and technical supports – develop fundraising strategies and materials.
5. ID of international coordinator from the range countries

Group 3 priorities:

1. Recruitment and dispersal studies using coloured band and satellite (GPS, GSM, GPRS)– need tree climbing training. Pre July.
2. Expand distribution of survey to look at presence and absence – DoFPS lead with RSPN support (for Bhutan).
3. Prioritise captive breeding.
4. Awareness and education.
5. Horizon scanning and pre-emptive action – such as upscale native species fishery and fish ladders.

Discussion points:

- *Have got RS Facilitators in each Range Country already.*
- *An experiment could be done to dig out a pond and stock with fish. In Bhutan this has been tried but found WBH do not go there when other species are feeding there (like fish eagle), even when they did feed, did so tentatively. to minimise illegal fishing they gave some fish to villages. Also have another shallow pond for heron but WBH not visiting much.*
- *Need to consider how we handle incoming data from satellite tracking and who can adequately interpret the data – such as tag activity. Potentially “movebank”(an online database for wildlife tracking hosted by Max Planck Institute for Ornithology) could be donated via UWICE. Sherub (working with Max Planck of Ornithology doing a PhD on Griffin Vultures and Black Necked Crane) could potentially help with data handling. Simon also has some expertise.*

Group 3 priorities:

1. Initiate CB facility.
2. Dispersal information, particularly juveniles, using coloured rings and satellite tracking.
3. Survey new areas with historical and *potential* sites.

4. Advocate for legal protection – no go areas (India and Myanmar); and work for better protection status in India and China – send resolution by WBH WG.
5. Awareness and sensitisation about status and plight of the species – use tools like China. Develop range specific and global plan to increase awareness.

Discussion points:

- *We could look at using centralised computer modelling (e.g. Max ent) system to predict where WBH might be. Need to know which variables to use, like forest cover, climatic variables etc. For WBH it seems human activities often determine where it is so would require significant thought and input. Might be better than doing at individual country level.*
- *ICF have done this with whooping crane in US. Has been very effective. Some factors would be: elevation (<1,5000 m a.s.l – though questionable), settlements, rivers, ...*

Group 4 priorities:

1. Expand surveys to cover more potential areas and then get it mapped.
2. Assessing riverine ecosystem health – survey all environmental parameters.
3. Satellite tracking and colour banding on juveniles for Bhutan only.
4. Feeding preferences study food type and composition.
5. Captive breeding.

Discussion points:

- *Assessing health of river systems is very long-term. Need to look at fish availability, turbidity, temperature*
- *Can look at benthic invert species to look at cleanliness of water*
- *In Bhutan there is no evidence to suggest food is a limiting factor - no starving chicks or emaciated adults. So probably not a priority if there is available food.*
- *But in Namdapha think they do have a preference for particular species of fish.*
- *Need an objective to justify looking at health of all riverine systems. Could relate to planned dams and mitigation. Could be working with planning agencies.*
- *Could examine eggs and for levels of pollutant*
- *Should build dialogue with hydro companies and then once built then monitoring to find out what happens to WBH then correlate this with dam impacts.*
- *In Bhutan, some testing of water has been done. Did not find anything, though suspected **potentially mercury**, fertilisers or other pollutant an issue.*
- *Probably not big issue unless mining industry etc.*

White-bellied Heron Working Group (WBH WG) – Will Duckworth

Aim: to help develop the existing working group so it can fulfil the desired role/s and function/s to better support the group.

Discussion Led

Many of the workshop attendees are part of other Specialist Groups or Working Groups within IUCN. Views on these were:

- Mainly considered them to be effective tools.
- Needs a chairperson who can delegate.
- Provides higher level of accountability.
- Easy to criticise from outside.
- Dual leadership could help ensure that the team works together.

- Emotional baggage (that comes with saving a species) means group needs to keep small. These individuals are then responsible for listening and gathering other opinions and making decisions to drive things forward.
- Whooping Crane Recovery Plan – could modify WBH SCS to make it more like this.
- Steering committee could be useful.

What we want from the WBH WG:

- Mandate that the outcomes of the action plans are achieved in a timely and professional manner.
- Drive implementation of conservation strategy – at appointed time according to an agreed work-plan or a strategy.
- Coordinating body.
- Raise funding/resources.
- Help write proposals for projects and grants; also helps secure grants using a single voice and “endorsement” of the work.
- Produce relevant documentation.
- Understanding where and how to look for appropriate skills and expertise to fill gaps and fulfil needs and make appropriate connections.
- Reduce feeling of isolation.
- Maybe liaise with governments (??).
- Grow global awareness of the species.
- Ensure longevity of the interest.
- Give donors confidence and help them shape donors in what they are thinking.
- Students/others – can find you more easily to become involved.

Anonymous feedback for the following questions:

- 1. Is it valuable to have a WG for WBH?** Mostly said yes, three say no for the following reasons: Bhutan doesn't need a WG as have been doing it alone for a long time; funds are the important thing; people already working on it.
- 2. What is the single most important thing that the WG can help you with?** Leverage of funds; linking, coordinating and building ability to exchange ideas and experience; building a strategy with prioritised actions; information sharing and help keep people motivated.
- 3. What is the single most important thing a WG could do for WBH conservation?** catalyse and speed up progress; engage with hydro companies; prioritise survey areas; get accurate information on research and experience; recognise the contribution made by each country and make resources to expand this; identify people in each country to do actions; work toward cooperative proposals for funding; discuss problems to benefit from group brain; advance awareness in developed countries to attract funding; raise funds; drive range countries toward strategic actions for collective impacts; coordinate captive breeding and satellite telemetry; more study; make the species less threatened; expand the surveys; sharing info and experience to understand what has and needs to be done; bring together the range countries; put mechanisms in place to monitor planned WBH conservation actions; discuss with Head of Range Countries/bring people to the table; information sharing; shared work-plans & process; driving force working across government; thrash out the final plans on who is going to do what, how and with what; trialling new equipment; endorsing actions.

Help with funding (identified as key need):

Can do this at various levels:

- Joint and/or agreed proposals – would require detailed level of oversight, trust and coordination. This could include large-scale grants which are divided between the different range states.
- Endorse funding proposals and coordinate to ensure not competing within Working Group.
- Flag funding opportunities.

Longer-term might need to consider a paid international coordinator position and/or dedicated fundraising officer as unlikely all the fundraising needs can be met by a volunteer coordinator (especially looking at things like joint GEF proposals).

4th December 2015

1. White-bellied Heron Working Group next Steps

Based on smaller breakout group, with current range state facilitators and some other key representatives, the following next steps were determined for the existing Working group:

The desired functions (grouped from 3rd Dec) include:

- Effective implementation of the Conservation Strategy.
- Coordination.
- Fundraising – coordination (GEF scale would require external, paid input).
- Endorsement, building a common fund (?).
- Connecting expertise where gaps might exist.
- Global awareness raising.
- Motivation and support.
- Collective impact.
- Engaging with government and private sector/helping others to engage.
- Sharing information and bringing it together.

Current Structure:

1. **International Coordinators** (unpaid): To keep in touch with everyone linking to funding opportunities, endorsements, communications, tracking progress towards strategy, being contact point for task forces & RS facilitators, helping to bring in/link necessary expertise, organising international workshops/meetings etc.
 - Gemma Goodman-Hattie (in-place since 2014)
 - Madhu Roa (committed during Dec 2015 meeting).
2. **Range State Facilitators** (unpaid): are the key contact point within each country from which information can be fed and shared; will help promote/push implementation of the SCS within each country; identify gaps and needs and organise regional meetings. These include:
 - Bhutan: Dr Kinley, Rebecca Pradhan (RSPN) and Sonam Wangchuk (representing the Dep of Forests and Parks, WCD)
 - India: Sarala Khaling (Atree)
 - Myanmar: Than Zaw (WCS)
 - China: Prof Han (Southwest Forestry University)
3. **Task Forces:**
 - Captive Breeding Taskforce – Rebecca to lead with Cathy, George, Department of Forests
 - Banding and Satellite Task Force – Rebecca, Sherub (others to be included)

- Communications Task Force – unidentified, for now - Madhu and Gemma

Potential task forces for the future (plus others):

- Dam and fisheries task force
- Education and awareness and advocacy task force
- Water Pollution

2. Identifying highest priority actions: Report back from break-out session

Five groups were created with the task of determining which subjects (threats or actions to be taken) are of highest need (categorising them into high, medium and low) of being addressed for the effective conservation of White-bellied Heron and whether these will have a direct or indirect impact on the heron.

Not all groups provided responses to all the questions. However, they have been categorised according to the level of importance given by all those who responded to each particular question.

Of high importance and direct impact:

1. Captive Breeding
2. Satellite Tracking
3. Improved law enforcement
4. Sand Dredging
5. Gold Mining
6. Dams
7. Powerlines
8. Hunting and Human Disturbance

Of high importance and indirect impact:

1. Surveys of habitat and birds
2. Changes to legislation, particularly up-listing
3. Fundraising
4. Creation of No-go zones
5. Research to identify threats

Of medium importance and direct impact:

1. Colour banding
2. Taking a proactive approach to threat reduction (such as man made fish ponds)
3. Roads

Of medium importance and indirect impact:

1. Awareness raising and advocacy
2. Working Group
3. Understanding feeding preferences
4. Assessing riverine health
5. Understanding genetic diversity (high/medium)
6. Ecotourism
7. Providing livelihood alternatives
8. Expanding the protected area network
9. Mapping to identify potential important habitat

Of low importance and indirect impact

1. Producing a workshop resolution

Two new actions were added: engagement with the wider community (which may also be captured in raising awareness) (suggested by one group) and citizen science (suggested by two groups).

Discussion points:

- *Some groups felt dams and powerlines should not be divided as threats. However, while the threats are interlinked as generated power must be transported, the interventions to tackle these threats will differ. Fitting powerlines with flight diverters is a relatively simple solution.*
- *The colour banding and satellite tracking should be done together*
- *Mining applicable largely to Myanmar and China*
- *Sand Dredging, need to include boulder removal etc.*
- *Uplisting in India is important – Sarala, Gemma and Madhu to follow-up on this. Should include a special plea that researchers be permitted to study what is not known about the birds.*
- *Bhutan – uplisting the bird to Schedule 1 is in process now.*
- *WG could explore producing general publications to be shared online – need to be password protected and shared with group. Grey literature too (check RSPN website about pubs).*

3. Workshop Resolution

The White-bellied Heron, one of Asia's rarest birds, has only 60 confirmed individuals throughout its range and an estimated world population of fewer than 250 individuals according to the IUCN Red List. The White-bellied Heron therefore qualifies as Critically Endangered, meaning it is at significant risk of extinction should action not be taken to address the continuing, new and increasing threats in its wild habitat, including infrastructure development, such as dams, roads and overhead power lines; hunting and human encroachment; and extractive industries such as gold mining and sand dredging.

The Royal Government of Bhutan in collaboration with the Royal Society for Protection of Nature hosted a workshop between 1st and 4th December 2015, the second international workshop on White-bellied Heron conservation. The hosts and the wider White-bellied Heron community recognised the urgent need and opportunity to take proactive steps to improve the conservation status of the White-bellied Heron across its known current range countries of Bhutan, India, Myanmar and China.

Participants, comprising non-governmental organisations, government officials and academics from each range state, as well as international experts representing organisations such as the IUCN Species Survival Commission (SSC) Heron Specialist Group, the Asian Species Action Partnership, the SSC Species Conservation Planning Subcommittee; BirdLife International and the International Crane Foundation, agreed that international collaboration, based on adequate resourcing is vital for the survival of the species. It was agreed that the IUCN SSC White-bellied Heron Working Group would help to do this. Key actions identified during the workshop, included fitting satellite tracking devices to young herons before they leave the nest, to better understand their dispersal and the threats faced. Adult birds will have individual colour rings fitted as opportunity allows.

A captive population will be established in Bhutan (when funding is secured), with eggs carefully taken from nests, aiming to minimise any possible detriment to the wild population. These individuals will establish an insurance population against the extinction of the species, as well as an opportunity to reinforce existing small populations or restock areas of historical occurrence should conditions be right. Further, it will provide key information about the behaviour and biology of the species.

There remain large areas of unsurveyed potential habitat in remote locations, often with difficult access. Efforts will be made to identify areas most likely to be holding unknown populations of White-bellied Heron. Surveys will aim to collect standardised data. These will be accompanied by extensive awareness programmes in associated communities. At the same time each range country will attempt to ensure the White-bellied Heron has the highest level of protection through legislation, and that this is then enforced accordingly. This is particularly important for India where the bird currently sits on Schedule IV, meaning that while it is protected by law, penalties for contravention of the law are significantly less than if it were on Schedule I, despite its incredible rarity.

Effective conservation of the White-bellied Heron will need significantly greater resources and could be part of broader efforts to conserve the rich biodiversity of its range across the Eastern Himalayas. Ongoing and increasing collaborative efforts to save this species will be key to its survival.

Participants

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