Meeting Summary
Guangdong Huidong Gangkou Sea Turtle National Nature Reserve
June 17

Key Highlights:

1) Gu Hexiang has been promoted and Wang ShaoTeng will become Director of the Guangdong Huidong Gangkou Sea Turtle National Nature Reserve.

2) The research priorities for the Reserve are sea turtle bycatch issues.

3) The Reserve receives 70-80 turtles per year caught by fishermen (most alive, a portion dead).

4) Researchers at Reserve are amendable to:
    1) Increase outreach to fishers via turtle handling workshops
    2) Explore gear technologies – primarily trawl and gillnet technologies

5) Reserve has 10+ years of bycatch data and may be amenable to receiving aid in analyzing bycatch rates, temporal and spatial bycatch hotspots.

6) Continue with genetic, telemetry and health assessment projects.

Summary:

John Wang, Siri Hakala, and Jihong Dai traveled to the Guangdong Huidong Gangkou Sea Turtle National Nature Reserve (here after referred to as the Reserve) to meet with the new leadership of the Reserve, determine the Reserve's priorities with regards to its ongoing and future collaborations with NOAA researchers, finalize action items for the sea turtle component of the LMR Panel, and to tour the facility.

Gu Hexiang was the former Director of the Reserve and has recently been promoted to the Director General of the Natural Reserve of Ocean and Fisheries of Guangdong Province. This new position has the responsibility of overseeing 4 other reserves including the Reserve.

Director General Gu Hexiang provided logistics for the visit to the Reserve and made introductions to Deputy Director Wang Shaoteng of the Reserve. Deputy Director Wang has been in his position for under 1 year and is expected to step into the role of Director of the Reserve within the next year. Wang 's former position was the Director General of the Guangdong Provincial Fisheries Bureau.

In addition to Gu and Wang, present at our meeting was Mr. Yeh (Director of Science), Dr. Xia Zhong-rong (Deputy Director of Science), Mr. Chang (Director of Communications and Education). Mr. Wu (retired Director General of the Fishery

Bureau and former first Director of the Huidong Gangkou Sea Turtle National Nature Reserve) who is now Chairman of the Guangdong Recreational Fishing Association, and Mr. Shen (Secretary of the Guangdong Recreational Fisheries Bureau).

After introductions, we outlined proposed action items related to sea turtle research: continued genetics research, continued satellite telemetry, sea turtle health assessment, and training fishermen to handle turtles. When asked which one would be their priority, Dr. XIA immediately indicated that their research priorities were sea turtle bycatch issues. The majority of the subsequent discussions centered on the current state of turtles and fisheries in the region, bycatch data that the Reserve had been collecting, immediate steps that the Reserve would like to engage with NOAA collaborators, and potential future research directions the Reserve would like to see.

Further Details:

Dr. Xia initiated the discussion on the research priorities for the Sea Turtle Reserve by stating that the number one priority for the Reserve was to address sea turtle bycatch. This was then echoed by Deputy Director Wang and then further discussed by Director General Gu. Each year, 50-60 sea turtles caught by local fishermen are brought into the reserve for rehab and eventual return to the ocean. In addition, another 20+ dead sea turtles/year are also brought to the reserve by fishermen. Dr. Xia feels that this represents only a small portion of sea turtles that are interacting with the various fisheries as many other fishermen may not be bringing in turtles and that other regions outside of the immediate vicinity of the Reserve did not have facilities where fishermen could easily bring turtles. For 2016, there already have been over 20 turtles brought in after being captured by local fishermen. The Reserve currently holds 1,500 sea turtles. We were not able to ascertain to what percentage are from their breeding program versus how many were bycatch.

Director General Gu indicated that the Reserve has approximately 10 years of this turtle bycatch data. The Reserve records when the turtles were brought in, what type of fishing gear the turtles interacted with, where (sometime with GPS) the turtles interacted with the fishing gear. The greatest interaction is with various trawl fisheries, with a lesser amount interacting with gillnet fisheries. We were not able to fully understand what species these fisheries specifically targeted. Dr. Xia further emphasized that there was a need for gear research, in particular gear selectivity research to reduce bycatch.

Other discussion points included a desire to understand how bycatch is dealt with on the US side. We provided the Hawaii shallow set longline fishery as an example. Mr. Yeh indicated a need to explore the social and economic components to gear adoption. Director Gu suggested the need to include NGOs such as Sea Turtle Rescue 911 in some of the potential outreach programs.

The Reserve indicated a willingness to continue with genetics, health assessment, and telemetry as topics of continued research directions. The meeting concluded with an agreement that the attached action items be included in the LMR Panel Meeting's action items under the Sea turtle Research section.

Some thoughts:

This push to address bycatch issues represents a major shift in our discussion with the Huidong Gangkou Sea Turtle National Nature Reserve. Having new leadership at the Reserve, especially one that has had experience in the local fisheries may be a factor in this shift. Nonetheless, the experience at the Reserve does parallel the experience we have had at the LMR panel with what seems to be a more pragmatic tone with regards to the impacts of China's fisheries. To date, we have been very careful to NOT push sea turtle bycatch as a component of our collaborative research. With this shift in research needs, there now exists several new opportunities for sea turtle conservation:

1) Working with the Reserve to understand the current state of sea turtle bycatch in Guangdong Province via analysis of the existing sea turtle bycatch data collected by the Reserve – bycatch rates, peak periods of bycatch, potential hotspot areas, most problematic gear types.

2) Helping the Reserve to broaden their outreach to fishers. The Reserve has developed relationships with local fishermen with a bi-annual meeting. The Reserve and some sector (it is unknown if it is the Fisheries Bureau, or if it is directly with fishermen – though it does sound like the later) of the fishing industry meets in August and in December to exchange information and feedback. It was suggested that this existing relationship could be further expanded with workshops focusing on sea turtle handling techniques, new gear technologies, and other outreach activities to generate broader relations with fishers in the region. NOAA has several resources to help with this outreach. By creating a broader relationship with the fishing sector, a foundation for future gear studies could be laid.

3) Providing the Reserve and other CAFS researchers with opportunities to explore new gear technologies. This desire to focus on bycatch also allows better alignment with the China-US LMR Process. During the 2016 LMR meeting, Chinese delegates indicate a desire to better understand new fishing gear technologies aimed at increasing catch selectivity. Dr. Wang Lumin (Deputy Director General of East China Sea Fisheries Institute) indicated a desire to engage NOAA on this topic. By adding a component of bycatch reduction technology, it would help tie sea turtle conservation issues back to the LMR process. Such opportunities could take the form of Chinese scientist visiting the annual TED testing program in Panama City and for proposed workshops in China to include bycatch components.

4) Expanding the involvement of NOAA researchers to include the involvement of SEFSC's Mississippi Harvesting Systems Unit. If analysis of bycatch data suggests

that trawl fisheries are the major issue, bringing in the expertise of researchers from this unit would be most appropriate.

Pictures of (left to right) 1) John Wang and Director General Gu, 2) Deputy Director Wang and John Wang, 3) Dr. Xia, JiHong Dai, Director General Gu, John Wang, and Siri Hakala.

Action Items to be added to the LMR Actions:

5) Sea Turtle Research

- Develop a collaborative project to better understand fishery threats to sea turtles in Chinese waters, improve fishing gear selectivity and sea turtle handling, and develop a better understanding of the social and economic perspectives that fishermen have (Xia and Wang)
    - Develop a fisherman training program focusing on sea turtle handling techniques which utilizes the relationships that the Gangkou Sea turtle reserve have with local fishermen
    - Exchange information on current and new fishing technologies that improve gear selectivity.
- Organize 3rd China - US Sea turtle workshop to provide a platform to exchange research ideas and hold training modules on gear selectivity, bycatch avoidance, health assessment and analysis of satellite movement data. (Xia, Balaz, Jones, Seminoff, Wang)
- Further strengthen data for sea turtle genetic stock composition research (Xia and Dutton)
- Continue with satellite telemetry of sea turtles utilizing the South and East China sea. Initiate analysis of movement data to understand migration corridors and foraging grounds (Xia, Balaz, Jones)

From: **John Wang**
Date: Tue, Jun 21, 2016 at 1:10 PM
Subject: LMR and Sea turtle Reserve meeting updates
To: Todd Jones -, Jeffrey Seminoff , George Balazs

I've attached a trip report to the Sea turtle Reserve, but also wanted to mention how things went at the LMR Panel meeting.

It was an overall excellent meeting and an opportunity to move our sea turtle collaborations in new areas.

The Chinese delegation certainly seemed more frank with regards to the challenges facing their fisheries. Their leadership started with a critical assessment of their fisheries indicating that their fish stocks were low, their industry was at over capacity, and their out put at a much lower trophic level. In short, they indicated that their fisheries had changed their marine environment for the worse.

Some notable quotes from the LMR meeting:

Dr. Li Jilong (Former Director of International Cooperation, CAFs and now a Professor at CAFs), speaking as Ned Cyr's opposite: "China's 12.8 million fishing vessels has affected the trophic level of fish catch and the resulting by catch associated with this fishing effort is a major driver to the decline in biodiversity (paraphrased)."

Dr. Wang Lumin (Dep. Director General of East China Sea Fisheries Research Institute, CAFS), during his introduction of a video on new fishing technology: "Gear selectivity work will be the only way forward for wild caught fisheries."

Director General Gu (Natural Reserve of Ocean and Fisheries of Guangdong Province), during his presentation: "50-60 live turtles are brought into the reserve each year due to by-catch and this is of primary concern to the Refuge."

During my introduction to Dr. Zhang Xianliang (President of CAFS), he stated that "Sea turtles in China are in a drastic situation and working with fishermen will need to be a major focus in order to improve their status."

So it seems that since the last LMR meeting, their is a willingness to engage in some new directions - in particular with regards to sea turtle interactions with fisheries. I found it very hopefully that our Chinese colleagues ***initiated*** a frank and open discussion on sea turtle by catch issues.

At some point we should schedule a call to discuss next steps. I will be leaving for San Diego Thursday and then will be in Baja for the next several weeks. We can do so when I return in Mid July.

Aloha,
John

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(for further, see attached file)