

## **CA-NV Golden Eagle Working Group Notes**

**Reno, NV**

**January 27, 2014**

### **Review of action items - Carie Battistone**

Data availability/sensitivity policy summary – Chris and Heather. Not done. Back as an action item. Helicopter overflight impacts on sheep – articles posted on website. Eagle online coordination tool – progress made, will be discussed today. Eagle Mortality database forms and diagrams – done, will be discussed today. Database development – progress made, will be discussed today. Coordination on historical and current status of eagles – done, will be discussed today. Draft Research Subgroup Purpose and Distribute for Comments - Laura Nagy to draft, Heather Beeler to distribute. Not done. Back as an action item. Publication for eastern population of golden eagles – posted to website. Distribute notes from May 2012 eagle meeting at USFWS R8 - Heather Beeler. Not done. Back as an action item. FWS/CDFW salvage permits summary – no lead designated, CA does permit salvage, contact Carie for more information Volunteering monitoring effort - will be discussed tomorrow.

### **USFWS Update – Heather Beeler and Amedee Brickey**

ECP guidance module 1 released April 2013. Duration rule published December 2013. Extends permit term to 30 years. Increased fees. Permit Rule proposed changes: Sacramento, April 3rd workshop. To be verified in the next 2 weeks. Heather to send out clarification email on this announcement. Shiloh IV – Estimated take of 5 eagles over 5 years. Permit decision expected in spring of 2014. Alta East – Draft EA under development. Out for public comment in 2014. 5 year permit. PG&E O&M – applied for 30 year permit under new regs. TWS Shasta-Sac workshop on eagles being discussed and planned for 2014. Eagle Biologist GS-9/11, Term, full-time, in Cheyenne WY announced. Will be part of western-wide eagle team. Jessi Brown, UNR Contractor, working on GOEA conservation strategy within DRECP was introduced. DRECP status – large scale (22.5 mil acres) conservation plan to address RE development and permitting in the Mojave dessert. Draft EIS expected out for public comment spring/summer 2014. USGS (CEC funded) developing conservation monitoring plan for DRECP. Workshop held in November to start plan. This plan will not be developed in time for public comment period.

### **USGS Update – David Wiens**

Provided status of projects in CA and NV. Predictive models – fatality estimates, effects of “take”, habitat occupancy. Survey methods are standardized and scalable – distribution and status, optimize detection probability, adaptive management. DRECP monitoring protocol – in development, expected

completion in spring 2015. Demography around Altamont – data collection and analysis in progress, expected completion late 2014. Assessing food habits and prey avail in Mojave Dessert – data collection underway, expected completion Spring 2016. Geospatial analysis of population and habitat condition – database mostly complete, maps/model in development, expected completion summer 2014. Jackrabbit prey abundance in Mojave Dessert – database in development, draft manuscript complete, expected completion summer 2014. Spatial use, home range, and habitat use in Mojave Dessert – in development stage. Site occupancy, nest success, movement behavior and genetic structure in San Diego County – in development stage.

### **Brian Woodbridge, USFWS Western Eagle Conservation Team**

Team established in 2013 in response to regulatory and cons concern for eagles. Three year lifespan. Objectives: proactively address energy threats to eagles, develop conservation strategies, work collaboratively with other teams, researchers, states, flyways, JVs, LCCs, tribes, NGOs industry, etc. “Move the conservation needle.” Have been spending time evaluating previous efforts and talking to those involved. “Systematic Conservation Planning framework” – organize, refine and prioritize objectives. Rapid assessment approach – best available science – literature, data, expert opinion and modeling. Lots of reliance on modeling that recognizes and defines uncertainties. Framework is adaptive. First two steps in progress. Step 1 – Identify and characterize “eagle landscapes”, and Step 2 – Identify and describe limiting factors. E.g. Southern/Central CA Plains and Hills – oak savanna, ground squirrel habitat, tree nesting dominant, high density eagle pop, all age classes are resident. E.g. Snake River Basin – sage steppe, jackrabbit prey, Beldings ground squirrel, high density eagle pop, adults resident, young migrate. Have been working to compile and synthesize data and information within pop units. Helping fund data entry within R8. Use data for breeding and habitat suitability modeling. Movement and migration (breeding and wintering) modeling ramping up now. Starting meta-analysis now of movement data. Funding more telemetry units to fill in gaps. Looking at prey base relationships – review and synthesis effort. Step 2 is spatially explicit process. Modeling mortality sources – energy, contaminants, vehicle collisions, etc. E.g. Southern/Central CA Plains and Hills – increased urban development, wind power development, high rates of mortality and wind projects, extent of pop unknown. E.g. Snake River Basin – wildlife and climate change, invasive plants impact prey habitat, electrocution, Pb exposure, predator control programs (Pb, contaminants, poisons), loss of foraging habitat. Cooperative projects – Region 8 and CDFW database entry, Boise State University/USGS dietary response to habitat change, Colorado State University breeding season distribution and habitat suitability, USGW Corvallis Pb/recreational squirrel shooting study, and Oregon Eagle Foundation surveys and density study and PTT deployment.

### **Jeep Pagel, USFWS “DIED” Database**

Development was a collaborative process with FWS. Database is up and running. Please enter mortality info into database. References available in DB to help with data entry – publications, diagrams, etc.

Data form - required info listed in red – e.g. name, agency, phone, permit #, location, etc. DB for bald or golden eagles. Drop down menus make it user friendly. If info unknown, put unknown, don't guess. Field for tracking bird – when it goes to repository or other location. Necropsy details can be placed in DB. Thought is that we'll have a DB with injured and dead eagle data to determine threats and trends. Entry takes 4-10 min per eagle. Q: If we have old dead eagle data, do we enter it? A: Yes. Understand that time is limiting, so send data to FWS to enter if need be. Q: Can anybody enter data in here? A: No. Access is vetted. Have to be given permission by FWS. Now FWS employees, some state employees, and select researchers now have access. Q: How to determine double tracking? A: Limiting access. Q: Will large datasets be migrated? A: Yes, but again, time is limiting. Some LE issues to consider. Q: How will private land owner data be handled? A: We can work around location info entered into DB. We want all data. Q: Is FWS developing systematic necropsy methods. A: CA and ? have permission to necropsy eagles prior to sending to repository. Q: When is contact to be made when researchers or others find injured or dead eagles? A: Working out things with NV. For CA, rehabbers are reporting info to FWS and DFW. All dead eagles will go through WIL in CA. Q: will data be available for researchers to analyze. A: Yes, for the most part.

**Sandra Brewer, BLM NV.**

Expecting national policy out soon that will cover renewable energy excluding geothermal. It can then be stepped down to the regions. Nevada has little renewable energy; the main industry in Nevada impacting eagles is mining. Sandra looking to pull from CA eagle IM so that there is consistency across the region. If BLM believes project will take an eagle, their NEPA document will describe the potential impact, will encourage folks to get a permit, but voluntary, in FEIS/EA and ROW grant, condition that if an eagle is killed without a permit activities will stop until a permit is in place.

**Amy Fesnock, BLM CA.**

CA continuing to work with national office for consistency. Research to help fill in data gaps to help mgmt. decisions. Eagle policy IM related to renewable energy. If BLM believes project will impact to eagles NEPA doc will describe what that impact is. Applicant to then apply for permit with FWS. Permit voluntary though. If they choose not to get permit, BLM will put in condition that all activities will stop if eagle is killed until a permit is in place. Amy will send email link if anyone needs it. Project activities: Ocotillo express – opted to put radar system in. System used 1-5 times only. No eagles have been taken. Alta East – first ROW issued by BLM, applicant in process of getting eagle take permit. Granite Wind – 10 territories surrounding project. Applicant withdrew application based on high pop eagle and potential for take for eagle. BLM tries to “cull” “bad” projects up front rather than send them thru process only to be denied. BLM does have authority to stop a project. Sometimes this has not been the general view. If take occurs and they don't have a permit, then permit would only be allowed with nighttime operation.

### **Patti Kruger, USFS**

Low wind energy projects on land, mostly due to road access. GOEA was evaluated as Sensitive Species ranking. A way to determining protection of a species. Not listed due to apparent abundance in NoCal. Reevaluate once data is entered. 2012 planning rule utilizes Sp of Cons Concern. GOEA listed as G5, CA: S3, NV:S4. Listing as locally rare is option for planning units within FS. FS data is added to CNDDDB as BIOS layer. Next dump is in Feb. Maps with eagle data for CA and NV were provided.

### **Cris Tomlinson, Pacific Flyway Council (PFC) Coordination**

Gave overview of PFC and eagles groups associated with the Nongame Technical Committee (NTC). ETAT activities: inactive nest and buffer zones, predictive models and assessing roost disturbance, revision of Eagle Act, and 30-year take revision. NTC working on development of a Golden Eagle Occupancy Monitoring Protocol, and Standardized Terminology and Protocols Across the Flyway. Looking to GOEA Research Subgroup to help review terminology documents to allow for better consistency and data comparison. USGS priority research, via ETAT, summarized (handout also available).

### **Matt Maples, NV GOEA Mining Subgroup**

Challenges – eagle cons plans had unclear guidance. ECPs were being developed without clear guidance. There was a lack of communication and standardized permitting pathways for mining industry. Opportunities – develop a clear permit pathway, improve coordination, data collection efforts of raptor nesting. Developed draft workflow to help with permitting. Initiated data sharing process. Workflow diagram presented (still in draft form so not distributed). Goal is convey info to mining industry and allow state and feds to communicate with industry. In 2014 – revise and finalize workflow and work on data sharing process.

### **Mike Best, PG&E**

Develop eagle conservation plan for electric infrastructure, gas distribution lines, hydro facilities, and O&M activities. Conservation measures - power pole retrofitting, avian protection plan, etc. Infrastructure – figures given, but main point is lots of land to be covered with variety of activities. Ongoing activities – documenting eagle mortalities, repair high risk poles, avoiding disturbance, nest removal, avian safe construction zones in high risk areas, retrofitting poles (4,890 poles in 2012), research to reduce impacts of power poles, conduct monitoring. FWS asked for help on mitigation technique for retrofitting poles. PG&E reviewed all mortality data in 2002, 90 incidents. Identified high risk poles for retrofitting. Process for wind industry to use pole retrofitting as mitigation needs to be

completed. PG&E has suggested steps to take. Strongly recommend an APP. Process – collaboration/discussion, identify pole locations, implement actions, monitor actions, maintenance of actions. Flowchart and checklist developed. Duke settlement – fined or eagle mortalities. Brought up questions for industry on LE actions. Per pole estimate varies based on pole type. Generally between \$1000 to \$5000.

### **Laura Nagy, CalWEA**

Looking for research opportunities. AWWI updates – database development. Confidentiality issues being addressed. Taber Alison is contact. Resource information system – wind energy using database for pre and post monitoring data. Trying to increase participation in system. Out of Oregon State. AWWI working on Pb abatement process. Help expand mitigation options. Framework on national research plan – methods to prevent eagle take at wind farms (radar, etc.).

### **Carie Battistone, CDFW, online coordination tool**

Provided an overview of the upcoming web site and how to use it. Mohave Desert Ecosystem Group key player in development. Will be available on GOEA WG web page soon. Heather or Carie approving access to site. Sites can be marked as sensitive or non-sensitive. Sensitive data will only be available to admin (Heather and Carie) and the user that entered the data. Other states may be interested in adopting a similar format for their respective areas. Important to emphasize that this was created in response to early discussions within the WG that we needed/wanted to do a better job of being aware of ongoing activities to limit stress on eagles. Database only houses location of research/monitoring and contact info. It will not house research or monitoring data. This is different than the CNDDDB. Recommendation made to coordinate this effort with Tabor Alison relative to AWII efforts

### **Steve Schoenig, CDFW Eagle Database**

More simplistic database than CNDDDB. Excel spreadsheet, not geodatabase or Access database. Less training/knowledge base required to use than CNDDDB. Point occurrence database. Data fields and definitions have been determined. Standard format would help in the sharing of data between entities. USFWS Western Eagle Conservation Team is helping with initial input of data. Need to reach out more to determine how the database will be used. Use will be tracked over time and potentially modified overtime if needed. By being eagle centric, greater opportunity for the database to be kept more current than the CNDDDB, which will be more prone to competing data entries. Data will be going into BIOS. Can extract data from other sources (e.g., EBIRD, CNDDDB, etc.). CDFW also working on a online data submission tool for wildlife data. Can also be used for eagle data. We expect the BIOS layer to be live in about a month. About 4-6 weeks for online field data entry sheets to be made available. POC Kate Whitney, owlobs@wildlife.ca.gov

### **John Boone, GBBO NV GOEA statewide survey**

Rationale and goals – support BLM energy management goals, representative baseline map of nest sites distribution, map survey coverage. Aerial and ground both used – aerial for priority areas and those with difficult access. Used stratified random sampling in focal areas. 70% of higher priority land area and focal areas were searched in 2011. 26 sites were not surveyed initially and were targeted in 2013. 2013 continued work with aerial and ground surveys. New component “calibration” studies – ground rapid vs. ground intensive surveys. Ground rapid = drivable roads, short hikes, incomplete but unknown detectability. Ground intensive = search of all possible suitable habitat by ground or foot, no time consideration. Also compared aerial vs. ground intensive, aerial vs. rapid ground, and nest occupancy (intensive revisits). Analysis started – in progress. 18 of 26 sites were surveyed by ground in 2013. Plan to be done with analysis March 2014.

### **Joel Thompson, West Inc. aerial surveys**

CEC funded. Target area was DRECP area. Objective – estimate abundance using methods for western-wide surveys. Targeting post fledgling period (July/Aug) and winter survey (Dec) for 2013. Precision was not identified. Transects were 50 km long, 50/25 km apart. Sampling area was 3 times larger than western-wide survey. Some areas couldn't be surveyed due to air space restrictions. Due to low sample size they applied western-wide detection function to the data. Two eagles detected in summer surveys. Three birds detected in winter surveys. Five birds total. Millsap estimated 500-600 eagles in BCR 33. Population estimate came out to be 93 during summer and 140 during winter. Low detection could have been due to project boundary limitations, 2013 being a dry year, and summer surveys being a little later than normal. Considerations for future – expand study area? Stratify the sample to areas with better habitat? Change survey timing? More survey effort and more transects? Possible considerations – block transects, using FLUR, and comparing ground vs. aerial detection.

### **Todd Katzner, WVU**

Research themes WVU covers includes: (1) home range and habitat use of territorial Mojave eagles, (2) movement behavior of non-territorial California eagles, (3) origins of lead poisoning in eagles killed at Altamont, (4) Non-invasive demographic monitoring, and (5) building a database of all turbines in CA & NV. Home range and habitat use of territorial Mojave eagles: breeding season Jan-June, post-breeding July-Nov, earliest long distance movement May 5, latest long distance movements Oct 3, movement varied among territories but more birds moved longer distances in post-breeding period, home range size varied by month with Feb, Mar, May-April seeing larger home ranges, most prevalent habitat types were semi-desert, non-vascular plant, and forest and woodland. Movement behavior of non-territorial California eagles: non-territorial range size highly variable, cover type varied but majority of cover type

in home range included grassland and warm temperate forest. Origins of lead poisoning in eagles killed at Altamont: sequenced GOEA genome, evaluated 34 eagles killed at Altamont, structure suggests one population, 28 locally grown, 3 maybe grew elsewhere, 3 highly likely elsewhere. Building a database of all turbines in CA & NV: validated locations of 11,181 turbines in CA and 83 in NV, geocoded thousands of new turbines, available on Todd's webpage.

#### **David Wiens, USGS, Estimation of site Occupancy and Nesting Success of GOEA in Mt. Diablo area.**

Using multistate occupancy modeling design. Tree-nesting population. All ground based surveys. 58 territories monitored in core area, 3.6 % of breeders identified as subadults. . Reproduction variable – 20-84 % nest annually. 160 pairs required to compensate for annual mortality. Are there enough pairs to sustain population? 150 pairs tagged with radio telemetry near Altamont are using large range outside Altamont. Looking at occupancy and nesting spatially considering habitat. Objective for 1<sup>st</sup> year surveys (2014) – estimate total number of pairs, spatial variation of nesting pairs based on habitat variables, identify factors associated with detecting breeding pairs (timing of surveys, duration of survey), and assess utility of occupancy multistate model (Nichols et al. 2007 and MacKenzie et al. 2009). For methods and design see PPT. Since Jan 10 identified 26 new territorial pairs.

#### **Todd Katzner, GEWG Publication Update**

Todd gave brief update on the GEWG effort to develop publication (“Status, Biology, and Conservation Priorities for Golden Eagle (*Aquila chrysaetos*) Populations in California and Nevada”). Carl Thelander is lead but was unable to attend today. Carl is currently refining objectives and outline. Group to continue work over the next year.

#### **Jeep Pagel, mortality paper**

Sources of mortality vary. Turbines placed in eagle habitat or planned for placement. Fatalities – where is the data? Used only verifiable mortalities, publically available documents, and reports from wind industry. Anecdotal info (17 accounts) were not included. 6 incidents for BAEAs found. 79 incidents for GOEAs found. 54% of fatalities were found incidental to turbines. 25% were unknown source of discovery. 18% discovered using planned surveys. Few wind facilities incorporate systematic surveys. Some carcasses found far away from blades. More fatalities have occurred since paper in multiple states. Numbers in paper are likely low estimates.

#### **Krysta Rogers, CDFW Wildlife Investigations Lab (WIL)**

Starting last year, a mechanism has been set up for WIL to sample and necropsy before they are given to repository. Obtaining eagle carcasses from various sources, including rehab centers. Have developed forms for necropsies – includes date, location, age, sex, measurements, photos, samples taken (tissue, feathers), and COD. Looking at secondary impacts from pesticide usage as well as other contaminants. WIL sharing with the appropriate fed and state agencies. Would like to expand efforts in the future to include live eagles sample collection. Will speak to this more at research subgroup meeting tomorrow. In future would also like to summarize historical eagle records WIL has in possession. Long-term storage facility available at WIL. Krysta would like more info on how many birds were tested for WNV from UT. New concerns: WNV in UT (more info needed), mange in CA and ticks in AZ.

### **Sherry Liguori, PacifiCorp, power pole retrofitting**

Results – 2001-2011 # poles surveyed = 120,000. Multivariables evaluated. Season: majority fatalities in winter months. Age: More juveniles are electrocuted in bald. For golden's subadult electrocution is more prevalent. Pole type – tangent vs end vs corner poles, see different mortality for bald and golden's given pole type. Equipment: equip placed on poles (transformers), more significant factor for other birds rather than eagles. 40% of poles with GOEA mort had historic retrofitting. Why? - perch discouragers didn't work, gaps in coverage, covers damaged or falling off. Standards have been refined (cover-ups). Important to conduct due diligence in researching best product for the pole you are retrofitting. Perch discouragers – sometimes caught in between protecting diff sensitive species (sage grouse vs eagles), perch discouragers generally don't work, more nesting rates on discouragers, pushing birds to other poles to perch on. Effectiveness of retrofitting – results show sig reductions in mortality (collision and electrocutions), effectiveness highly correlated with good products and proper installations. Proper installation requires lots of training, planning and collaboration. QC is critical. Process is more complex than people think. Field surveys important. Proper installation is critical, along with having proper materials.

### **Research Subgroup Updates and Discussion**

Jeff Smith, the moderator of Research Subgroup's December 2012 *Symposium on Distribution, Abundance, and Population Status of Golden Eagles in California and Nevada*, summarized objective and what was learned. Program with abstracts and some of the ~20 talks, ~10 posters are available on our CA-NV GEWG website. Heather recapped January 2013 Research Subgroup meeting. Research priorities identified after symposium were; need to understand mortality sources (lead poisoning from varmint shooting, electrocution, shooting of eagles), how to monitor eagle populations, and genetic and lead analysis. Data gaps identified include, lack of coverage in CA central coast and west slope of Sierra Nevada, efforts on eagle databases, seasonal mixing of migrants and dispersers, need for long term data sets, and need to understand eagle prey base. Next symposium topics were discussed. Briefly highlighted agenda for tomorrow's Research Subgroup meeting.

## Notes from Posters:

- Research Projects Discussed
  - NDOW Survey
  - Aerial SUEVEYS
  - Movement and Genetics
  - Site and Nesting Success
  - GEWG Publication
  - Wind Energy Related Mortality
  - CDFW Wildlife Investigations Lab
  - Power Pole Retrofit
- Websites Mentioned
  - GEWG: <http://www.dfg.ca.gov/wildlife/nongame/GEWG/>
  - CDFW BIOS: <http://www.dfg.ca.gov/biogeodata/bios/>
  - Pacific Flyway: <http://www.pacificflyway.gov/>
  - FWS Region 8 Eagle Page: <http://www.fws.gov/cno/conservation/MigratoryBirds/EaglePermits.html>
  - Katzner Lab: <http://katznerlab.com/wind-energy>
- Follow-up Items:
  - Jobs announced
  - Eagle Act Revisions
  - Raptors of NA in Washington
  - Presentations on the GEWG webpage
  - Coordinate with AWWI (Taber Allison)
  - Eagle Database
  - Coordination with Pacific Flyway
  - Online Coordination Tool
  - Katzner Lab

## Meeting Wrap-up

Acknowledged CA-NV Working Group and partner's accomplishments over past three years. Examples include:

- CA-NV GOEA Database developed and being populated
- Online Coordination Tool developed
- Research advancements - distribution, demography, lead and contaminants, monitoring methods

Action Items:

- Data availability/sensitivity policy summary – Chris and Heather
- Post link to Eagle online coordination tool to GEWG webpage – Carie
- Post info eagle observation database to webpage as things develop - Carie
- Draft Research Subgroup Purpose and Distribute for Comments - Laura Nagy to draft, Heather Beeler to distribute
- Distribute notes from May 2012 eagle meeting at USFWS R8 - Heather Beeler
- Date for Permit Rule Workshop in Sacramento to be verified in the next 2 weeks - Heather to send out clarification email on this announcement.
- Post presentations from today to GEWG webpage - Carie