

**DRAFT CA-NV Golden Eagle Working Group Notes**  
**November 15, 2011**

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**Participants:** Adam Duerr, Allen Fish, Amedee Brickey, Amy Fesnock, Brian Latta, Brian Latta, Bronwyn Hogan (on phone), Carie Battistone, Carl Thelander, Chrissy Howell, Chris Nicolai, Christy Klinger (on phone), Craig Swolgaard, Elliot Chasin, Dale Steele (on phone), Dan Driscoll, Doug Bell, Garry George, Geary Hund (on phone), Heather Beeler, Jim Nelson, Judd Howell, Kevin Cahill, Laura Nagy, Lily Douglas, Marie Straussburger, Mike Best, Mike Kochert (on phone), Murrelet Halterman, Nancy Frost (on phone), Nick Todd, Patti Krueger, Paul Andreano, Renee Rivard, Rob Doster, Russell Scofield, Sandra Brewer, Shawn Smallwood, Steve Abele, Steve Peterson, Tom Lupo, Tom McCabe, Tom Darin, Trish Miller, Wally Erickson (on phone)

**Purpose:** To provide a forum to discuss and coordinate activities surrounding golden eagle inventory monitoring research and conservation efforts in California and Nevada.

**Objectives:**

1. Present results of the Fort Collins Meeting
2. Brainstorms additional needs for CA and NV
3. Form a subgroup to address research
4. Coordinate survey and monitoring
5. Review activity on database
6. Present brief agency update
7. List follow up actions
8. Evaluate Meeting

**Introductions:** 30+ participants in the room and about 6 via phone.

**Research Efforts**

- Marie Straussburger, USFWS
  - Fort Collins Golden Eagle Working Group Meeting
    - Developed a list of 30 questions that need to be addressed. Narrowed this list down to the top 5. This list was sent out to the CA/NV Working Group for input, but we have not received feedback.
    - Meeting covered the west, looking to focus on CA and NV, partially due to the lack of understanding eagles in the desert.
    - Marie asked what the priorities were for this group. Want to narrow down top 1 or 2 research efforts and then address how they get done, who does it, how is it funded. Establishing broad research questions and making sure that we are filling data gaps and how are we going to move forward.

- Are in a new fiscal year of trying to figure out the budgets, so the funds available are unknown. Project developers have money available for research and how does the group use this information.
- Want to highlight the top 5 questions that were narrowed down.
- Priorities – what are we trying to answer, feasibility, funding...
- Suggested that a symposium be developed to discuss what we actually know and facilitate moving forward. **This will be a task for the research subgroup.**
- Agencies need to make decisions on projects now. There are outside pressures to approve.
- Discussion on R1: What are the critical habitat factors across all seasons?
  - Can spend a lot of time here, should we focus on real geographic regions based on satellite data based on where eagles are more active but rather how critical certain areas are. Want to go after raw data to see how birds are using the state.
  - At the first meeting, the discussion was what is the footprint of the group, the counter was looking at BCRs. When looking at the rule, management is at the BCR level.
  - BCR might be too broad. Group is interested in breaking this down into smaller regions.
  - There are long term and. short term needs. How do we move forward in the near term?
  - Focus on how the data are being collected and need to identify and evaluate the bias. Need a standardized methodology to avoid repetition, and accounts for bias.
  - Qualifications/skillset for the surveyors that are out doing the surveys is important factor. Could lead for the issue of training or standardization.
  - Would like to see research subgroup formed to address the qualification issue.
  - This question seems too broad. Food and availability of food, where the birds are going vs. how birds get there - what is important in the life of a golden eagle.
  - What is critical habitat for breeders vs. floaters, etc.
  - Create a level of stratification that allows for these differences. As we see new documents they keep comparing to waterfowl surveys that are brought up. Over 30 strata.
  - Conclusion – further refinement needed.
- Discussion on R2: What area minimally biased, age-specific survival rates and causes of mortality?
  - Do we make this wind specific, do we make it broader?
  - Problem with the question is that a very large samples size is needed for statistical significance.

- Because this was done for Altamont, probably want to start with doing this elsewhere.
- Need to account for human-induced impacts – recreation, poaching, poison, etc.
- Federal lands seeing recreational activities - rock climbing, OHV, etc. Lots of recreation impacts that go along with these activities. Also, impacts noted by USFS on prescribed burning and natural/unplanned burns.
- Information beyond wind energy is needed to. Wind energy is in the forefront, but so are these other issues.
- Could start with population size and trend over time. With that information, could plug in different estimates of survival to bracket the range of survival estimates to generate lambda.
- Need to find out if literature has consensus for dealing with long-lived species in terms of longevity and survival rates.
- Clarification of minimally biased – sampling the global bias is hard to do to sample for bias. For trying to estimating true survival, need to use apparent survival. Question needs some clarification of what are we using the survival analysis for (Risk assessment? Or is it recruitment? Is it apparent survival or lambda? ). With some long-lived species, such as lower Colorado cranes, recruitment induces population trends because adult survival is constant. Use apparent and true survival.
- Clarify and narrow down what we are after and see if we want to go where.
- Estimate of lambda is the sum of apparent survival + emigration.
- Dispersal events are that important because they aren't accounted for.
- General discussion
  - What do we need to do for CA and NV to meet the agencies needs based on all of those other factors. No comprehensive survey effort in CA.
  - Land management people don't think these questions will help them, though the questions are good. The questions that help are type that law enforcement ask, like question 19 – buffer adequacy.
  - Long term adaptive management is also important. This is just a starting point. The sooner that we have consistent methods so that survey data can be shared across the board and results can be compared.
  - Consider adaptive management. Adaptive management has worked effectively with waterfowl.

- Problem - time required to get some of these data. Can't defer wind development projects for lack of data. Need that information months ago. What can you give me now vs. what can you give me now.
- All the questions really coming to the question of how we are defining the population. If you put a wind farm on a little section, when birds get hit, a bird will come from somewhere else to replace it. The impact is much broader.
- Purpose and objectives of the whole group need further discussion and buy-in. It's hard to focus discussions when group is unclear on direction and how we get to where we want to go. We are not scheduled to address this today, but needs further discussion.
- Research subgroup sign-up list is passed around. Consensus seems to be that the research subgroup will tackle questions in detail.

### **Coordinate Survey Efforts**

- Need to make decisions on eagle management and to also coordinate between surveyors & researchers. Looking for the next survey season to get out ahead of getting in the field.
- Activity: Maps posted on the wall of CA [north and south] and NV. People physically marked on the maps (with sticky notes) their project location, project name and type, project lead, and time period. Projects are divided between Monitoring projects and Research projects. Yellow notes used for monitoring and blue for research or telemetry.
- Nevada
  - Great Basin – GBBO, Murrelet Halterman. Work unknown – more to come. Interested in continued nest mapping and funding in 2012
    - Some stuff going on in the Pah Rah Range. Make sure to touch bases with agencies so we aren't repeating ourselves.
- North Eastern California
  - A-Bio Resource Consultants – BLM contract - Nesting survey for GE on BLM land
- Northern California
  - El Dorado NF, Patti Krueger, Dawn Lipton USFS. Maintain seasonal closures of rock climbing locations. Multiple species info includes GOEA. Currently doing surveys.
  - Yolo County, Jeff Smith. Helicopter surveys. Spring 2010.
  - PG&E. Collinsville Wind Project. Survey completed. Monitor construction. Ongoing.
  - Altamont, East Bay Parks, Doug Bell. Looking at golden eagle nest productivity and mapping those locations in the greater Altamont area Project going to start in 2012 – going to target golden eagles that have territories that overlap with the Altamont – use the GSM to improve risk maps. Satellite telemetry to improve collision hazard mapping. 2012-2014 (w/Sean Smallwood) – Cell tower based Telemetry w/ Altamont GOEA

residents. Nest productivity and locations in greater Altamont area. Ground Based Nest surveys 2005-present (ongoing). Mosaic of results – not consistent. Eaglet Banding 2011-present (ongoing).

- Altamont, Sean Smallwood. USA synthesis of fatality and use data to identify patterns and problems. Analyzing use data over the last 6 years. Analysis of Altamont use data-flight pattern models to site new turbines, re-entering data into spreadsheets, 60,000 GOEA records. Ongoing
- Altamont, Sean Smallwood. Collision Safety/Hazard of new “FloDesign” turbines. Avoidance behavior. During 2012-2014 will synthesize of fatality on patterns and problems. Gathering reports and doing a meta-analysis. Doing some recounting with the data.
- Marin Headlands (S. Marin), Allen Fish, GGRO. Ongoing 1972-present raptor migration monitoring.
- Hollister Re-conductor, PG&E. Footprint monitoring and surveying, Jan-Dec.
- Southern California
  - BLM Land, Amy Fesnock. So Cal desert Bio-resource Consultants. Co-ordinate with BLM if you are in the area. Avian protection plans: incorporate nest monitoring surveys within a 10 mile radius around project sites. 25 years (Ivanpah Solar, First Solar Desert Sunlight, Tule Wind). Engaged through Larry LaPre in coordinating data entry into BLM database.
  - Todd Katzner, West Virginia University. Golden eagle home range, habitat use High resolution GPS Telemetry on BLM land in Mojave desert. How wind and solar might influence habitat use. GOEA home range habitat use and demography. Winter 2011-12/2011-2013 tagging adult and fledglings to observe habitat use. o
  - e- Bio Resource Consultants Nesting surveys in CA deserts
  - Inyo Co. “Rising Tree” BLM. Point Count/Nest Surveys during 2011-2012 Winter Spring
  - San Bernardino, Painted Hills, First Wind. Nest Surveys and Post-construction mortality monitoring during 2012.
  - San Bernardino, San Diego, Kim Boss, Patti Krueger USFS, Cleveland NF. Maintain seasonal closures of rock climbing locations. Multiple species info includes GOEA.
  - Cleghorn, NF. Monitoring recreational activities 2 seasons ground based surveys. Needs to be year round of continued.
  - Mojave, Sonoran Deserts, San Diego Co., Carie Battistone, CDFG. Permitting - no mechanism for getting info back from surveys only. Telemetry research upcoming funded by Section 6 and SWIG grants. Distribution, habitat association, dispersal, productivity, migration for 2-3 years. Will have the similar objectives as BLM project. Sonorado desert, Mohave, and SD county

- Kern County, Laura Nagy, CalWEA. Point Counts.
- Renee Rivard, Wildlife Research Institute. Demography research and monitoring. San Diego, Dave Bittner, Chris Meader. GOEA demography monitoring.
- Wallace Erickson. Looking at this issue of the western wide surveys and look at the areas that only have breeding birds surveys. There is a research project looking for an association between BBC and the WEST surveys to see how they can be applied to BCR's without data.
- Need a mechanism for follow up coordination.
- BLM doing a lot of work in the desert so they may be a good lead for that area. Surveys currently do not require permits, so long as the research does not involve handling (telemetry, banding, trapping, etc.) then permits are not required. State MOUs require reporting. Working group will try to help coordinate survey/monitoring/research efforts among the entities doing these activities.
- Need to have a self-maintained map that users can log into and map their projects. Idea was to develop an online mapping/reporting tool where users log on with a password and then are able to post comments. Would have to be updated timely so that everyone had the information. Seems that it would be useful that it could be that kind of thing to sustain itself. Database subgroup will take lead on this.
- People would have to update it timely. This seems to be very important since researchers are reporting that multiple parties are working on the same eagle nest without knowing of each other's activities.
- For each project, an avian protection plan is developed that incorporates doing the standard nest surveys around a 10 mile buffer. Want to make sure that we don't end up surveying the same eagle territories multiple times.
- CA does not really have a mechanism for having that input back form people who are doing survey out there.
- Is there a map for BLM proposed survey areas or could we create one for projected survey areas? BLM will look into this.
- FWS will put sticky notes on pdf and share as a product.
- What about outreach? Who will tell other groups that aren't present?
  - Agency and project side should make other entities aware – maybe a more formalized process
  - Might need to come up with a cooperative memo.
  - Short term can set up conference calls to make sure that people are connected.
  - Schedule conference call so that people are connecting.
- FWS has new POC in Carlsbad to replace Eric Kershner

*\*\*Side conversation with those interested in Research Subgroup to identify purpose, initial objectives, and set date.*

- **Purpose of Research Subgroup:** Identify and prioritize long and short term research needs

- **Objectives:**
  - Understand existing data
  - ID research needs
  - Collaborate/coordinate on funding
  - ID potential mitigation
  - Provide Info for decision making
  - Organize
  - Consider consistent methodologies
- **Date:** January 17, Vallejo USFS [note: meeting was actually held on January 23]
- **Host:** Patti Krueger
- **Contact:** Carie Battistone

#### **Eagle Database Efforts**

- Internal agency meetings have been ongoing to discuss databases options
- BLM – Amy Fesnock
  - GIS map that has nest location tied to data table
  - 1 to many relationship
  - As nest revisited, new line is added so that data is tracked over time
  - All of historic data for Mohave region is in the database and have backlogs of paper data from the other field offices and districts that is slowly being put into the database
  - Intent is to upload the information in the CNDDDB to provide to all CNDDDB subscribers
  - BLM does have data standard for raptors that should be applied for all the information that is collected
  - No intent from BLM-wide eagle database
- USGS – Mike Kochert
  - Coordinated Bird Monitoring Database
  - Count database – stores counts (avian count data)
  - Owner defines as many variables as they want to the core variables
  - Has several levels of security – modeled after the Avian Knowledge Network – range from total access to no access.
  - If someone is interested, the contact the CBMD staff
  - CBMD is not an observations database (like ebird)
  - Users can select the database that you want to use
  - Aggregate data to calculate means
  - Can download either the raw data or the queried data

- Can map the data from the output
- Decision support and analytical tools
  - ArcGIS extension for sampling large landscapes
  - DS – estimates sensitivity and population side
  - Trends
  - Power analysis
  - Leah is the one to talk to
- Forest Service – Patti Krueger
  - Natural Resources Information System (NRIS)
  - Forest Service database of record
  - Any they fund or authorize – previously called Fauna (not aquatic related)
  - Originated from 2000 – federal agencies should have their own database
  - No separate data form for golden eagles – only separate for goshawks and spotted owls because of protected activity centers
  - Some timelag, but timing based on calendar year
  - Relational database (one-to-one; one-to-many)
    - Sites
    - Site Categories
      - ADM site – management area
      - Use are – protected activity center, critical habitat, foraging, territory, winter range, etc.
      - Bio site – bridge, burrow, cave, cavity, cliff, log, etc.
      - Bio origin (artificial, natural)
      - Bio origination methods (direct, other reported)
      - Bio use – non-breeding period, courtship, site-preparation, etc.
      - Obs methods –
      - Gender type
      - Age
      - Activity type – basking, breeding, begging, etc.
      - Visit history
        - Site condition (not applicable, usable)
      - Bio history
    - Data is not accessible, but data can be requested
    - Try not to store information from sitings >1 mile from the project
- NDOW – Christy Klinger
  - 3 databases
    - Scientific collection database
    - Site record database – random observations, mainly in house
    - Raptor nest database – relational
      - Point locations based
      - Some partner locations



- Contains historic and current raptor nests
- Data are update from the last recorded visit, but information from historic
- Tagged active if the last observation was active
- Challenges:
  - Not considered a comprehensive list of raptor nests in Nevada
  - Only documents active or nests that were positively identified. So records for empty stick nests have not been proactively added
  - Many older records were located in the center of township/range (pre-GIS)
  - More data out there that is collected by consultants that don't make it into the database. If they don't handle it, it's not reported.
- Do have a data sharing agreement and there is a reciprocity data.
- May need to think about those request to the NEPA process
- Handout has the list of the datafields
- Users of the database are internal – mostly in house staff and biologists
- Have some security features, usually described in the metadata
- 4 page summary of how the data can be used
- If get a data request, depending on the data request , may add buffers to the data.
- GBBO/NDOW/BLM - Murrelet Halterman
  - April 2011, coordinated effort looking to do a statewide survey or golden eagle nests (location only).
  - Priority areas primarily BLM land and some FS land. Did not survey tribal, military, or FS lands.
  - Primarily ground surveys (80-90%), but some helicopter and fixed wing surveys. Tall cliffs surveyed with helicopters.
  - Interest in a broad scale nest detection survey – broad brush approach and later point decisions can be focused
  - Also looked at buffer areas – FS areas that boarded, generally only a few miles
  - Coordinated with NDOW
  - Fixed amount of \$\$, because there was interest in covering large areas, most economical in doing ground surveys
  - Areas that can be access easily – estimating 80-90% that you could access from the ground. Some areas did have both ground and aerial surveys – planning on comparing 2 methods
  - Distributed a map that showed surveyed areas
  - Have a ground-based protocol and datasheet

- Not trying to figure out if they were currently active eagle nests. Nest surveys picked up all raptor nests and were classified based on possible use. Survey looked at all potentially suitable habitat (trees, cliffs, etc.). Ranked nests in terms of how possible it was a GOEA.
- What was the smallest cliff they looked at
  - 1 nest in a cottonwood tree
- Tom Lupo, Branch Chief for Biogeographic Data Branch, CDFG
  - Dataset been around 12 years
  - BIOS system
    - Not a database, but a collection of databases associated with a web viewer
    - Central place where data are aggregated, mostly T&E species, but some invasive, vegetation maps, etc
    - This is an evolving collaboration tool. Online GIS tool. Ancient technology (ArcIMS Viewer); update coming via ArcServer (in beta now).
    - Nearly 400 public datasets
    - More than 650 total datasets
    - All state agencies required to submit data to BIOS; cooperative agreements with many federal agencies.
    - Has user layer-specific security. Some datasets restricted but most publicly available.
    - CNDDDB data (state's Natural Heritage Database) is in BIOS, and is single largest database in BIOS. Thorough metadata is mandatory. Available to this working group to house GOEA data.
    - Use layer system – can set access by layer
  - CNDDDB database
    - Special status species
    - Individual species observations and ranges
    - Vegetation maps
    - California protected areas database
    - Fish passage barriers
    - Invasive species
  - Need to have thorough metadata
  - CDFG does not own the data – provider still owns the data.
  - BIOS is available as a place to put golden eagles. Currently there is no golden eagle specific database. Merging databases together is tricky, but can be done.
  - Have dedicated staff whose job it is to address database implementation. If there is a need for something more (e.g. assimilate database into one and create a new database) then funding would have to be addressed.
  - The platform is there – hardware, software, and staff – we just need to know how to move forward.
  - Database subgroup to discuss how/if to use CDFG platforms for golden eagles

- PRBO – California Avian Data Center
  - Set up to handle bird data including banding, observation, nest data
  - Also aggregates databases
  - 6000 golden eagle records for CA
  - Pulls in data from ebird, a citizen science tool
  - All free access
  - Product of NGO, so not FOIAable
  - Ability to move quickly with less standard technology
  - Data aggregator like bios – not a database, just a collection of databases
  - Forest service database
- American Wind and Wildlife Institute
  - See [www.awwi.org](http://www.awwi.org)
  - Contract with Oregon State University to develop a pre- and post-construction database
  - Industry partners have been contributing datasets to figure out how to organize
  - TNC has been working with AWWI to develop a national scale mapping tool to look at the distribution of species of concern across a landscape level and is available on the AWWI website. Now available for public consumption.
  - Go to AWWI's website for more info.
  - Idea is to develop a database system for wind or wildlife to ensure confidentiality while providing the broadest access possible.
  - Data will come from projects, reports, and gray literature. Getting information from agencies on how they will use the data and how the data be shared.
  - Will provide detailed datasets and metadata for future use
  - Potential users would be AWWI partners including developers, agencies and scientists
  - Team giving input are trying to figure out how this will be done, so still in the initial phases. Industry is trying to figure out how it will be structured.
  - Issue of data and data sharing. Agency people want as much information as they can possibly get. Industry has reasons why they want data slightly less accessible.
  - Interest in doing initial pilot project – getting data in and basic reports available. Want some option of doing some kind of initial analysis – being discussed.
- USGS BBL
  - They reengineered the BBL database and are putting it in the oracle database. Soon will be accessible to the general public. System as it stands is user friendly and accessible, but it is not integrated with other database.
- DOD, Mohave Data Ecosystem Database
  - See [www.mojavedata.gov](http://www.mojavedata.gov)
  - Focus around Mohave data – California data
  - Managing data from other entities
  - No golden eagle data in it now, although this can change if there is a need
  - Flexibility to do multi-state comparisons

- Houses quite a bit of the desert tortoise data
- Working in partnership with the western regional partnership
- Need to develop:
  - Comparative table of databases. Carie and Tom Lupo will work on this.
  - Summary of FOIA/PRA for different agencies. Patti Krueger will work on this.

### Agency updates and coordination

- Tom McCabe – assistant regional director for migratory birds
  - Review of the permit rule
  - Population best is stable, may be declining. Net take is 0
  - Guidance does not impose any binding requirements beyond those already in the regulations
  - ECPs to be developed in five stages: 1—initial site assessment; 2—site-specific surveys and assessment; 3—initial fatality prediction stage; 4—application of ACPs and compensatory mitigation; 5—risk validation (post construction monitoring and adaptive management).
  - Timeline is 3+ years. Projects must be compatible with eagle preservation and consistent with the goal of increasing or stable breeding populations.
  - Wind guidelines are on the directors desk for final signature, does need to go to Washington still
  - Eagle guidance is anticipated to be out mid-December
  - Interim monitoring protocol still in use; not sure when the revised protocol will be issued.
- Regina Abella – statewide sheep coordinator to contact about lambing restrictions
  - Sheep and golden eagles share the same habitat
  - Concern is the lambs behave erratic when disturbed by helicopters. Lamb rearing period is January to June.
  - Guidelines suggest those planning helicopter surveys give the state heads up, and state will let you know if site is inside/outside lambing areas.
  - Options for what to do when there are lambing restrictions:
    - Conduct helicopter outside of the lambing season
    - Conduct ground surveys and follow ups
  - This has not formally been written up. Sticking with the current guidelines
  - There have been documented negative impacts to lambs. A list of literature that documents impacts will be sent out to group.
  - Don't have a map of lambing locations – depends largely on where the good forage is that year.
  - If you do encounter bighorn sheep, let the state know
  - Is there a chance for agency for reducing the date that might minimize loss of eagle data?

- During surveys in the breeding season, sheep surveyors only see about 60% of sheep that are there. It may be possible to work with the dates depending on the location, but would need to know more about that specific population. Will consider on a case-by-case basis.
- Christy Klinger & Pat Cummings - NDOW
  - Prefer not to have helicopters used to survey for GOEAs while you sheep are present (because they “scare” sheep and can cause injury or mortality to the lambs).
  - Sheep restriction will be worked out on a local level informally.
  - Agree with Regina’s position and would like not avoid helicopter use from 3<sup>rd</sup> trimester to late spring.
- Any other agency updates?
  - USFS
    - Being evaluated for forest service sensitive species in California
    - Little accessible data to see what is happening to golden eagles in CA
    - Joining the ranks with BLM to see if they can be #2 in energy available.
    - Getting a heavier rate of inquiries of wind, solar, and geothermal onto national forest lands. High chance to put a lot of wind energy development on forest service lands.
    - Permitting process came out in September of 2011 that defines how the USFS is supposed to manage wind projects.

#### **Follow-up**

1. Research Sub-Group
  - a. Proposed date of 1<sup>st</sup> meeting tentatively set for January 2012, USFS office in Vallejo
    - i. Patti Krueger (host)
    - ii. Carie Battistone (contact)
2. Develop Comparative Tables of Data Bases
  - a. Who: Carie Battistone & Tom Lupo
  - b. When: Soon
3. FOIA Summary regarding Eagle Data
  - a. Who: Patti Krueger
  - b. When: Not in the next 3 weeks
4. Bighorn literature on helicopter impacts to bighorn sheep
  - a. Carie will send with contact info
5. Survey Mapping Coordination
  - a. ID Mechanism to track research and monitoring efforts. Needs to be timely
  - b. Who: Carie Battistone, Heather Beeler, Amedee Brickey