48TH JOINT ANNUAL MEETING

NEW MEXICO AND ARIZONA CHAPTERS OF THE WILDLIFE SOCIETY
AND ARIZONA/NEW MEXICO CHAPTER OF THE AMERICAN
FISHERIES SOCIETY

FEBRUARY 5-7, 2015

HOTEL ENCANTO DE LAS CRUCES

LAS CRUCES, NEW MEXICO
Restaurants close to the Hotel Encanto, Las Cruces, NM

*Farley's is offering a limited lunch menu and free soda or ice tea for JAM workshop participants on February 5th (11:30AM-1PM) and hosting the student mentor and Women of Wildlife lunches on February 6th (11:30AM-1PM). Identify yourself as an attendee of the Joint Annual Meeting if you go to lunch at Farley's on February 5th or 6th.
# Schedule at-a-Glance

**Thursday February 5**

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 a.m.</td>
<td>4:00 p.m.</td>
<td>Piscicide Training</td>
<td>Guadalupe</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>3:00 p.m.</td>
<td>Interview and Resume Building Workshop</td>
<td>Soledad</td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td>4:30 p.m.</td>
<td>R Workshop I (8-11:30a.m.) &amp; II (1-4:30 p.m.)</td>
<td>San Agustin</td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td>12:00 p.m.</td>
<td>Wildlife Handling and Restraint</td>
<td>Tularosa</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>11:00 a.m.</td>
<td>Law Enforcement use of Social Media</td>
<td>San Rafael</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>3:00 p.m.</td>
<td>Reptile Enforcement</td>
<td>San Rafael</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>4:00 p.m.</td>
<td>New Mexico - Species of Greatest Conservation Need</td>
<td>Tularosa</td>
</tr>
<tr>
<td>2:00 p.m.</td>
<td>6:00 p.m.</td>
<td>Registration</td>
<td>Lobby</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>6:30 p.m.</td>
<td>Presentation Loading</td>
<td>Socorro Board Room</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>6:00 p.m.</td>
<td>Poster/Photo Set-up</td>
<td>San Rafael</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>6:00 p.m.</td>
<td>AZ TWS Business Meeting</td>
<td>Tularosa</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>6:00 p.m.</td>
<td>NM TWS Business Meeting</td>
<td>San Agustin</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>6:00 p.m.</td>
<td>AZ/NM AFS Business Meeting</td>
<td>Soledad</td>
</tr>
<tr>
<td>5:00 p.m.</td>
<td></td>
<td>Raffle and Silent Auction Open</td>
<td>San Rafael</td>
</tr>
<tr>
<td>6:00 p.m.</td>
<td>9:15 p.m.</td>
<td>Welcome Social and Appetizers</td>
<td>Azul Lounge and Patio</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td>9:00 p.m.</td>
<td>Student Quiz Bowl</td>
<td>San Andres Ball Room</td>
</tr>
</tbody>
</table>

**Friday February 6**

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 a.m.</td>
<td>12:00 p.m.</td>
<td>Registration</td>
<td>Lobby</td>
</tr>
<tr>
<td>7:00 a.m.</td>
<td>11:00 a.m.</td>
<td>Presentation Loading</td>
<td>Socorro Board Room</td>
</tr>
<tr>
<td>7:30 a.m.</td>
<td>8:45 a.m.</td>
<td>SW Section Breakfast-open to all attendees</td>
<td>San Andres Ball Room</td>
</tr>
<tr>
<td>10:00 a.m.</td>
<td></td>
<td>Deadline to Submit for Photo Contest</td>
<td>Conference Registration</td>
</tr>
<tr>
<td>9:00 a.m.</td>
<td>11:30 a.m.</td>
<td>Plenary</td>
<td>San Andres Ball Room</td>
</tr>
<tr>
<td>11:30 a.m.</td>
<td>1:00 p.m.</td>
<td>Lunch</td>
<td>On Your Own</td>
</tr>
<tr>
<td>11:30 a.m.</td>
<td>1:00 p.m.</td>
<td>Student Mentor Lunch &amp; WOW Lunch</td>
<td>Farley’s Restaurant</td>
</tr>
<tr>
<td>12:00 p.m.</td>
<td>5:00 p.m.</td>
<td>Photo Contest Voting Open</td>
<td>San Rafael</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>3:00 p.m.</td>
<td>Wildlife Student Paper Competition</td>
<td>Guadalupe</td>
</tr>
<tr>
<td>3:00 p.m.</td>
<td>5:20 p.m.</td>
<td>Technical Sessions-Wildlife</td>
<td>Guadalupe</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>5:20 p.m.</td>
<td>Technical Sessions-Wildlife</td>
<td>Soledad, San Agustin</td>
</tr>
<tr>
<td>1:00 p.m.</td>
<td>5:20 p.m.</td>
<td>Fisheries Student Papers</td>
<td>Tularosa</td>
</tr>
<tr>
<td>4:00 p.m.</td>
<td>5:30 p.m.</td>
<td>Presentation Loading</td>
<td>Socorro Board Room</td>
</tr>
<tr>
<td>4:30 p.m.</td>
<td>6:30 p.m.</td>
<td>Poster Session Social</td>
<td>San Rafael</td>
</tr>
<tr>
<td>5:30 p.m.</td>
<td></td>
<td>Raffle and Silent Auction Close</td>
<td>San Rafael</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td>9:30 p.m.</td>
<td>Banquet and Awards Ceremony</td>
<td>San Andres Ballroom</td>
</tr>
<tr>
<td>7:00 p.m.</td>
<td>9:30 p.m.</td>
<td>Poster/Photo Take Down</td>
<td>San Rafael</td>
</tr>
</tbody>
</table>

**Saturday February 7**

<table>
<thead>
<tr>
<th>Start</th>
<th>End</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:45 a.m.</td>
<td>8:00 a.m.</td>
<td>AFS/TWS Officer Breakfast</td>
<td>Garduño’s</td>
</tr>
<tr>
<td>8:00 a.m.</td>
<td>11:20 a.m.</td>
<td>Technical Sessions – Wildlife and Fisheries</td>
<td>Guadalupe, Soledad, San Agustin, Tularosa, San Rafael</td>
</tr>
<tr>
<td>Time</td>
<td>Wildlife-Student Competition</td>
<td>Wildlife</td>
<td>Wildlife</td>
</tr>
<tr>
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</tr>
<tr>
<td>1:00</td>
<td>Evaluation of habitat suitability for dam-building beaver in northern New Mexico- <strong>Brian Small</strong>*</td>
<td>Subterranean surveys of White Sands Missile Range, New Mexico- <strong>Jason Corbett</strong></td>
<td>White Sands Missile Range – Avian Protection Plan: power line bird protection in support of the military mission- <strong>Richard Harness</strong></td>
</tr>
<tr>
<td>1:20</td>
<td>Landscape of anthropogenic traffic noise influences occupancy and space use- <strong>Hsiang Ling Chen</strong>*</td>
<td>New materials for a time-tested design for wildlife water developments in Arizona- <strong>Ed Jahrke</strong></td>
<td>Effects of wildfire on avian communities in the Arizona Sky Islands- <strong>Jamie Sanderlin</strong></td>
</tr>
<tr>
<td>1:40</td>
<td>Bat assemblage and selection of maternity roosts in a post-wildfire landscape- <strong>Erin Saunders</strong>*</td>
<td>Developing natural resource career pathways through citizen science- <strong>Rowan Converse</strong></td>
<td>Recovery for an ecosystem or a single species? An NRCS case study using the southwestern willow flycatcher- <strong>Stu Tuttle</strong></td>
</tr>
<tr>
<td>2:00</td>
<td>Identifying ranching leaders’ opinions of jaguar conservation and concerns with endangered species management through focused interviews- <strong>Colleen Svancara</strong>*</td>
<td>Wildlife collision mobile device data collection application- <strong>Scott Sprague</strong></td>
<td>Golden eagle studies on White Sands Missile Range, New Mexico- <strong>Paul Juergens</strong></td>
</tr>
<tr>
<td>2:20</td>
<td>Estimating abundance and density of American black bears in New Mexico using noninvasive genetic sampling-based capture-recapture methods- <strong>Matthew Gould</strong>*</td>
<td>Using literature review and State and Transition Models for the development of wildlife interpretations for Ecological Sites on the Colorado Plateau of Arizona and Utah, USA- <strong>Marcus Miller</strong></td>
<td>Effects of urbanization on birds – less water and more development leads to simplified communities- <strong>Mélanie Banville</strong></td>
</tr>
<tr>
<td>2:40</td>
<td>Genetic structure and hybridization of the northern leopard frog along the Mora watershed in northern New Mexico- <strong>Jose Griego</strong>*</td>
<td>Field trials of an oral sylvatic plague vaccine in Gunnison’s prairie dog colonies- <strong>Holly Hicks</strong></td>
<td>Arizona Antelope Foundation Southeastern Arizona Grasslands Pronghorn Initiative- <strong>Glen Dickens</strong></td>
</tr>
</tbody>
</table>

*Student paper
## Schedule of Oral Presentations • Friday, February 6 • Afternoon Session 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Presenter(s)</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:20</td>
<td>Parturient desert bighorn sheep survival strategies: environmental characteristics at female parturition sites and lamb nursery and predation sites</td>
<td>Rebekah Karsch*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>Effects of habitat restoration and climate change on scaled quail in south central New Mexico</td>
<td>Krysten Zummo*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Small mammal communities response to environment via barn owl pellets in Namibia</td>
<td>Jennifer Merems*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>Acute and sublethal toxicity effects of piscicide CF7 LegumeineTM (5% Rotenone) on tadpoles of the Chiricahua leopard frog</td>
<td>Guillermo Alvarez*</td>
<td>Tularosa</td>
</tr>
<tr>
<td>3:40</td>
<td>Effects of non-motorized human recreation on habitat use of medium and large-sized mammals in the San Francisco Bay ecoregion</td>
<td>Michelle Reilly*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>Impacts of solar energy development on breeding birds of the Nutt Grasslands, NM</td>
<td>DeeAnne Meliopoulos*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Impacts of natural and anthropogenic influences on jackrabbit populations in desert grasslands of southern Arizona</td>
<td>Jason Myrand*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>Nitrogen media affects the productivity of Nannochloropsis salina cultures algal biovolume, lipid signatures, and densities of invasive organisms</td>
<td>Herman Campos*</td>
<td>Tularosa</td>
</tr>
<tr>
<td>4:00</td>
<td>Survival and cause-specific mortality of translocated mule deer in southern New Mexico</td>
<td>Jana Ashling*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>Potential correlation of invasive species ecological shifts and nesting success of southern willow flycatchers</td>
<td>Stephanie Muise*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Short-term effects of wildfire on bat activity</td>
<td>Nicholas Goforth*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>A landscape approach for fisheries data compilation and predictive modeling</td>
<td>Nicole Eiden</td>
<td>Tularosa</td>
</tr>
<tr>
<td>4:20</td>
<td>Modeling black bear predation and scavenging using GPS cluster analysis</td>
<td>Sarah Kindschuh*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>Investigating lesser prairie-chicken seasonal habitat use, reproduction, and survival to understand patterns of declining lek attendance</td>
<td>Cody Strong*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Supplemental water methodology for reintroduced black-tailed prairie dog colony in Arizona</td>
<td>Riley Bogart*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>Conservation and Mitigation Program: an overview and progress update of Arizona’s newest conservation program</td>
<td>Sharon Lashway</td>
<td>Tularosa</td>
</tr>
<tr>
<td>4:40</td>
<td>Does a bear live in the woods? An analysis of urban black bear populations in northern New Mexico</td>
<td>Casey Taylor*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>Use of Conservation Reserve Program (CRP) habitat by lesser prairie-chickens in eastern New Mexico</td>
<td>Andrew Meyer*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Can the reestablishment of a keystone species manage woody encroachment across its former range?</td>
<td>Sarah Hale*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>Assessment of long-term monitoring of White Sands pupfish</td>
<td>John Pittenger</td>
<td>Tularosa</td>
</tr>
<tr>
<td>5:00</td>
<td>Assessing pronghorn fawn survival and cause-specific mortality using vaginal implant transmitters</td>
<td>Emily Conant*</td>
<td>Guadalupe</td>
</tr>
<tr>
<td></td>
<td>‘Texas Chapter of The Wildlife Society’s Wildlife Conservation Camp’</td>
<td>Cody Bergman*</td>
<td>Soledad</td>
</tr>
<tr>
<td></td>
<td>Identifying structural thresholds and landscape resistance for natal dispersal movements in an endangered forest obligate</td>
<td>Melissa Merrick*</td>
<td>San Agustin</td>
</tr>
<tr>
<td></td>
<td>Spawning ecology and captive husbandry of endangered Moapa dace</td>
<td>Scott Bonar</td>
<td>Tularosa</td>
</tr>
</tbody>
</table>

*Student paper
<table>
<thead>
<tr>
<th>Time</th>
<th>Wildlife</th>
<th>Wildlife</th>
<th>Wildlife</th>
<th>Fisheries</th>
<th>Fisheries</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Elk habitat use patterns in an</td>
<td>Identification of migratory paths</td>
<td>Tails with a dark side:</td>
<td>Differences in growth rate</td>
<td>Eradication of invasive</td>
</tr>
<tr>
<td></td>
<td>arid riparian corridor managed</td>
<td>and new breeding grounds of</td>
<td>whitetail and mule deer</td>
<td>and size variations in hand</td>
<td>aquatic species using</td>
</tr>
<tr>
<td></td>
<td>for migratory water birds-</td>
<td>greater sandhill cranes in the</td>
<td>hybridization in North</td>
<td>fed vs demand fed rainbow</td>
<td>carbon dioxide and liquid</td>
</tr>
<tr>
<td></td>
<td>Ryan DeVore*</td>
<td>Lower Colorado River Valley-</td>
<td>America-James Heffelfinger</td>
<td>trout-Ethan Mower</td>
<td>ammonia-Shaula Hedwall</td>
</tr>
<tr>
<td>8:20</td>
<td>Spatially explicit population</td>
<td>Does weather influence lesser</td>
<td>Predicting long-term</td>
<td>Use of cold branding in</td>
<td>Evaluation of long-term</td>
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<tr>
<td></td>
<td>structure analyses reveal</td>
<td>prairie-chicken demographic</td>
<td>pronghorn population</td>
<td>marking channel catfish-</td>
<td>mechanical removal of</td>
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<tr>
<td></td>
<td>barriers to gene flow among</td>
<td>parameters disproportionately in</td>
<td>dynamics in the southwest</td>
<td>Shawn Denny</td>
<td>brown trout from Apache</td>
</tr>
<tr>
<td></td>
<td>mountain lions in southwesterly</td>
<td>the sand shinner oak prairie</td>
<td>U.S.A. in response to climate</td>
<td></td>
<td>trout recovery streams-Jeremy</td>
</tr>
<tr>
<td></td>
<td>United States and northwestern</td>
<td>compared to the sand sagebrush</td>
<td>change-Jay Gedir</td>
<td></td>
<td>Voeltz</td>
</tr>
<tr>
<td></td>
<td>Mexico-Ashwin Naidu*</td>
<td>prairie?-Cody Griffin*</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>8:40</td>
<td>Assessing site and climatic</td>
<td>Male brood provisioning rates</td>
<td>The application of occupancy</td>
<td>Fish community's response</td>
<td>Turkeys, snails and</td>
</tr>
<tr>
<td></td>
<td>factors that influence large</td>
<td>provide evidence for inter-age</td>
<td>modeling to evaluate</td>
<td>to change water storage</td>
<td>crayfish... oh my! Three</td>
</tr>
<tr>
<td></td>
<td>mammal water site use with</td>
<td>competition for mates in female</td>
<td>intraguild predation in a</td>
<td>levels at Elephant Butte</td>
<td>fork springsnail habitar</td>
</tr>
<tr>
<td></td>
<td>camera-traps-Jordan Calvert*</td>
<td>Cooper's hawks-Lauren Lien*</td>
<td>model carnivore system-Gary</td>
<td>Reservoir-Eric Mannmoser</td>
<td>improvement 2014-Scott Lericch</td>
</tr>
<tr>
<td>9:00</td>
<td>Mule deer diet analyses:</td>
<td>Modeling the demographics and</td>
<td>Can a sylvatic plague vaccine</td>
<td>Predicting persistence of</td>
<td>Habitat diversity, water</td>
</tr>
<tr>
<td></td>
<td>comparing past with present</td>
<td>movements of band-tailed pigeons</td>
<td>for prairie dogs assist the</td>
<td>Rio Grande cutthroat trout</td>
<td>quality, and biotic factors</td>
</tr>
<tr>
<td></td>
<td>techniques-Chase Voirin*</td>
<td>in New Mexico-Christopher Coxen*</td>
<td>black-footed ferret recovery</td>
<td>populations in an uncertain</td>
<td>drive benthic macroinvertebrate</td>
</tr>
<tr>
<td>9:20</td>
<td>Genetic diversity and structure</td>
<td>Reverse sexual dimorphism,</td>
<td>program?-David Bergman</td>
<td>future-Matthew Zeigler</td>
<td>communities in desert</td>
</tr>
<tr>
<td></td>
<td>of jaguars from Arizona, US,</td>
<td>behavioral phenotypes, and</td>
<td></td>
<td></td>
<td>sinkholes-Wiebke Boeving</td>
</tr>
<tr>
<td></td>
<td>and Sonora, Mexico-Alexander</td>
<td>female reproductive success-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ochoa*</td>
<td>Allysia Kilanowski*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:40</td>
<td>Ecology of adult female Rocky</td>
<td>Assessment of biodiversity in the</td>
<td>Noninvasive survey methods for</td>
<td>Rio Costilla progress, challenges,</td>
<td>Isolation and characterization of</td>
</tr>
<tr>
<td></td>
<td>Mountain mule deer following</td>
<td>Northern Jaguar Reserve in</td>
<td>mid-sized and small</td>
<td>and impacts of large-scale native</td>
<td>twenty-five novel microsatellite</td>
</tr>
<tr>
<td></td>
<td>habitat enhancements in north-</td>
<td>Sonora, Mexico and its influence</td>
<td>carnivores in New Mexico-</td>
<td>sport fish restoration-Bryan</td>
<td>loci in Colorado pikeminnow-Renee</td>
</tr>
<tr>
<td></td>
<td>central New Mexico-</td>
<td>on the jaguar-Elan Sandoval*</td>
<td>Robert Harrison</td>
<td>Bakevich</td>
<td>Martin</td>
</tr>
<tr>
<td></td>
<td>Grant Sorensen*</td>
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10:00 - 10:20 BREAK
## Schedule of Oral Presentations • Saturday, February 7 • Morning Session

<table>
<thead>
<tr>
<th>Room</th>
<th>Wildlife</th>
<th>Wildlife</th>
<th>Wildlife</th>
<th>Fisheries</th>
<th>Wildlife</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room</td>
<td>Guadalupe</td>
<td>Soledad</td>
<td>San Rafael</td>
<td>San Agustin</td>
<td>Tularosa</td>
</tr>
<tr>
<td>10:20</td>
<td>Do least-cost models predict animal movement? - <strong>Annika Keeley</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Assessing the effects of climate change on the distribution of suitable environmental conditions for key species in the south central United States - <strong>Virginia Seamster</strong></td>
<td>Occupancy estimation of amphibian breeding in Yellowstone and Grand Teton National Parks: on the usefulness of covariates - <strong>Bill Gould</strong></td>
<td>Little fish big river - dam operations and fish life history - <strong>Bill Stewart</strong></td>
<td>Species from feces: a tool for genetically identifying bats - <strong>Faith Walker</strong></td>
</tr>
<tr>
<td>10:40</td>
<td>Pronghorn activity and behavior associated with anthropogenic water source developments in New Mexico - <strong>Dakota Neel</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Future landscape suitability and actionable management for several species of reptiles in Arizona and New Mexico - <strong>J. Tomasz Giermakowski</strong></td>
<td>Connectivity and isolation in the management of aquatic resources in the Sonoran Desert: nested frameworks for maintaining biodiversity - <strong>Joseph Drake</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Use of portable passive integrated transponder (PIT) antennas to supplement hoop and trammel net surveys in Grand Canyon - <strong>Mike Pillow</strong></td>
<td>A DNA sequencing approach for characterizing microbial and bat species composition in mines from guano - <strong>Viacheslav Fofanov</strong></td>
</tr>
<tr>
<td>11:00</td>
<td>Response of spotted salamander larvae to salinity and temperature - <strong>Jasper Bruselas</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Update on the Mexican Wolf Recovery Program - <strong>Sheryl Barrett</strong></td>
<td>The decline of another southwestern anuran species? Recent population trends of the Arizona toad in west-central New Mexico - <strong>Mason Ryan</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td>Factors affecting hoop net CPUE in Little Colorado River, AZ - <strong>Lisa Winters</strong></td>
<td>New paradigms in wildlife data collection - <strong>Michael Shafer</strong></td>
</tr>
</tbody>
</table>

*Student paper*
### NM Chapter of the Wildlife Society Executive Board

- **President** James Cain (USGS)
- **President-Elect** Quentin Hays (ENMU)
- **Past President** Robert Osborn (NMDGF)
- **Secretary** Virginia Seamster (NMSU)
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- **Board Member** Krysten Zummo (NMSU)
- **Student Chapter Liaison** William Lubenau (NMSU)
- **Student Chapter Liaison** Samuel Hernandez (ENMU-Ruidoso)

### 2015 Planning Committee

#### General Chair
James Cain (USGS)

#### Facility Arrangements
- James Cain (USGS),
- Bob Osborn (NMDGF)

#### Announcements
- Brian Hanson
- Virginia Seamster (NMSU)

#### Registration
- Elise Goldstein (NMDGF)
- Virginia Seamster (NMSU)

#### Plenary Committee
- James Cain (USGS)
- Bob Osborn (NMDGF)
- Leland Pierce (NMDGF)

#### Program Chairs (Technical Sessions)
- James Cain (USGS)
- Jennifer Frey (NMSU)
- Tiffany Love-Chezem (AZGFD)

#### Poster Session Chair
Annika Keely (NAU)

#### Continuing Education
- James Dominguez (NMDGF)
- Kristin Madden (NMDGF)
- Virginia Seamster (NMSU)

#### Student Social and Volunteers
Krysten Zummo (NMSU)

#### Abstracts
- Sabrina Deeley (NMSU)
- Ian Perkins-Taylor (NMSU)

#### Program Layout and Printing
- James Cain (USGS)
- Tiffany Love-Chezem (AZGFD)

#### Photography
Justin Hebert (NMSU)

#### Student Judging and Awards
- Jennifer Frey (NMSU)
- William Gould (NMSU)
- Kirk Patten (NMDGF)
- Yvette Paroz (USFS)
- Bob Osborn (NMDGF)
- Quentin Hayes (ENMU-Ruidoso)

#### Raffle
- Kathy Granillo (USFWS)
- Elise Goldstein (NMSU)

#### AZ TWS Liaison
Melanie Culver (USGS)

#### AZ/NM AFS Liaison
Sharon Lashway (AZGFD)

#### Website
- Elise Goldstein (NMDGF)
- Brian Hanson

#### Photo Contest/Job Board/Message Board
- Mark Watson (NMDGF)
- Jim Stuart (NMDGF)

#### Audio/Video Equipment
- Bill Stewart (AZGFD)
- Leland Pierce (NMDGF)
- Quentin Hays (ENMU-Ruidoso)

#### Quiz Bowl
- Heather Bateman (ASU)
- Quentin Hays (ENMU-Ruidoso)
- Krysten Zummo (NMSU)
- Audrey Owens (AZGFD)
- Jennifer Frey (NMSU)
Registration
Registration will be held in the lobby at the following times:
- Thursday, February 5  
  2:00 p.m. – 6:00 p.m.
- Friday, February 6  
  7:00 a.m. – 12:00 p.m.

Continuing Education
Eight continuing education courses are being offered on Thursday, February 5:
- Piscicide Training, credit hours for licensed applicator in the Guadalupe Room 9:00 a.m. – 4:00 p.m.
- Interview and Resume Workshop Soledad 9:00 a.m. – 3:00 p.m.
- R Workshop I San Agustin 8:00 a.m. – 11:30 a.m.
- R Workshop II San Agustin 1:00 p.m. – 4:30 p.m.
- Wildlife Handling and Restraint Tularosa 8:00 a.m. – 12:00 p.m.
- Law Enforcement Use of Social Media San Rafael 9:00 a.m. – 11:00 a.m.
- Reptile Enforcement San Rafael 1:00 p.m. – 3:00 p.m.
- New Mexico - Species of Greatest Conservation Need Tularosa 1:00 p.m. – 4:00 p.m.

Presentation Loading
During the following days and times you will be able to load your oral presentation in the Socorro Board Room:
- Thursday, February 5- 3:00-6:30 p.m.
- Friday, February 6- 7:00-11:00 a.m., 4:00-5:30 p.m.
If your presentation is scheduled for Friday, you MUST load your presentation on Thursday; presenters scheduled for Saturday can load their presentation either Thursday or Friday.

Raffle and Silent Auction
Raffle tickets will be on sale and the silent auction will be open Thursday starting at 5:00 p.m. through 5:30 p.m. Friday. All silent auction items will be on display in the San Rafael room throughout the conference. The raffle drawing will be at the banquet so be sure buy tickets!

Photo Contest
Come on out to the San Rafael room and help judge the photo contest. There are five categories: wild mammals; wild birds; wild reptiles, fish or invertebrates; habitat and landscapes; and recreation or employees at work. 5x7 up to 11x14 inch prints on backing board are accepted for the contest, no framed art. First ($15), second ($10), and third ($5) places will receive prizes, and Best of Show photo will win $50. Photos need to be entered in the contest at the registration table by 10 a.m. Friday, February 6. Name and contact information should be written on the back of all photo submissions. Photos should be removed between 7:00 and 9:30 p.m. Friday, February 6.

Business Meetings
Business meetings for AFS and TWS chapters will be held on Thursday, February 5 from 4:30 to 6 p.m. Arizona and New Mexico AFS will be in the Soledad room, Arizona TWS will be in the Tularosa room and New Mexico TWS will be in the San Agustin room.

Student Quiz Bowl
Come out to watch your schools compete in the wildlife and fisheries quiz bowl. Teams of undergraduate students from around Arizona and New Mexico are competing this year. Come out and watch on Thursday from 7:00 to 9:00 p.m. in the main ballroom.

Poster Session
The poster social will be held in the San Rafael room on Friday, February 6 from 4:30
p.m. to 6:30 p.m. In addition, presenters should make every effort to be at their poster during coffee breaks on Friday, February 6. Poster set-up will be on Thursday, February 5 between 4:00 p.m. and 6:00 p.m. It is the presenter’s responsibility to find their assigned space and setup/remove the poster during the designated times. Removal of posters should occur on Friday, February 6 between 7:00 and 9:30 p.m.

**Executive Board Breakfast**
The TWS and AFS Officers breakfast meeting will be Saturday, February 7 from 6:45 a.m. to 8:00 a.m. in Garduño’s Restaurant located inside the Hotel Encanto.

**Student Mentor Lunch**
There will be a student mentor lunch held on Friday, February 6 from 11:30 a.m. to 1:00 p.m. at Farley’s Restaurant which is located across Foothills Road from the Hotel Encanto. This is a great opportunity for students to talk with a variety of professionals from different organizations and agencies. Students must be pre-registered to attend.

**Women of Wildlife Lunch**
The Southwest (SW) Section Women of Wildlife (WOW) Committee will be meeting for lunch on Friday, February 6 from 11:30 a.m. to 1 p.m. at Farley’s Restaurant located across Foothills Road from the Hotel Encanto. Come and meet members of the SW-WOW committee, hear about their activities this year, and learn how to get involved!

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**Field Trip to Mesilla Valley Bosque State Park**
**February 7 1:00 – 1:45 PM**
Come join us to see this state park on the Rio Grande 2 miles west of Mesilla near Las Cruces. Jan Kirwan, the Park Superintendent, will lead this outing. Primary goals for this state park include habitat restoration and education. Thirty-three acres of saltcedar have been restored to native grassland. The park hosts at least two important research areas: 1) Bosque Ecosystem Monitoring Program; and 2) Establishment of vegetation through drought developed methodologies. In conjunction with New Mexico State University, Department of Animal and Range Sciences, the Land Life Company based in the Netherlands is studying the establishment of vegetation using buried clay pots with water.

Further information about the park can be found at [http://www.emnrd.state.nm.us/SPD/mesillavalleystatepark.html](http://www.emnrd.state.nm.us/SPD/mesillavalleystatepark.html)

There will be a sign up sheet at registration or you can contact: Brian Hanson (the trip coordinator) at bhtwsnm@comcast.net or 505-235-0427
This year's plenary theme is *New Technologies in Fish and Wildlife Science*. We sought to bring together a diverse group of presenters that are employing cutting edge technologies in their research and management activities. Although some of the technologies discussed during the plenary are technically not new and have been around for a while (e.g., genetic analyses) we believe that the novel application of these technologies in fish and wildlife research and management will be of interest to fisheries and wildlife biologists alike.

**9:00—Welcome and Opening remarks**
Moderator: *Jonathan J. Derbridge* (University of Arizona)

**9:10—Stable Isotopes in Fish and Wildlife Ecology**
*Scott A. Carleton*, New Mexico Cooperative Fish and Wildlife Research Unit.
Scott Carleton is an applied fish and wildlife research biologist with the New Mexico Cooperative Fish and Wildlife Research Unit at New Mexico State University. Dr. Carleton’s research focuses primarily on birds, but his work with stable isotopes has involved and continues to involve him in applied research on mammals, fish, and invertebrates. Dr. Carleton’s research program is focused on providing information to agency biologists that benefits the management and conservation of both fish and wildlife.

**Abstract:** In the last two decades, the use of stable isotopes in fish and wildlife ecology has grown exponentially. This growth has been fueled by new instrumentation that has lowered cost and increased the rate at which samples can be analyzed. Stable isotope analysis is now applied in every field of science from analyzing cosmic dust for mapping the galaxy to tracking individual elements from the environment into the cells of biological organisms. Successful application of isotope analysis across many levels of biotic and abiotic organization is at the heart of their usefulness to fish and wildlife ecology. These applications include the reconstruction of seasonal and lifetime movement patterns, diet reconstruction, differentiation of populations, determination of trophic levels, forensics, origins of geologic formations, and tracing contaminants. Stable isotope analysis will continue to be a valuable tool for fish and wildlife biologists well into the future.

**9:30—Golden Eagles of the Four Corners Region: A Case Study of Advances in Satellite Telemetry for Birds**

**Abstract:** Satellite telemetry has revolutionized the study of animal movements and ecology. In this presentation I draw on an ongoing study of golden eagles (*Aquila chrysaetos*) from the Four Corners region of the southwestern United States to demonstrate how satellite telemetry is advancing our understanding of avian ecology. The study addresses survival rates; relative importance of various causes of mortality; natal dispersal distance; migration; geographic areas and landscape features vital to the eagle; and seasonal distribution and resource selection. For more than two decades, study of avian ecology via satellite telemetry was limited due to the transmitters’ relatively large size. However, technological advances of the past 7-10 years have yielded solar-powered GPS transmitters.
suited for large- and mid-sized birds, and satellite transmitters for use on much smaller birds will be available soon. I will briefly review latest innovations.

9:50—Landscape-scale Genetics of Mammal and Reptile Species Using Microsatellite and Genomic SNP Markers

Melanie Culver, Arizona Cooperative Fish and Wildlife Research Unit

Melanie received her B.S. degree in Biology from the University of Utah. As an undergraduate Melanie worked in the laboratory of Nobel Laureate Mario Capecchi on mouse models for human disease. Following her undergraduate degree, Melanie worked as a Research Technician on the Human Genome Project. Melanie entered graduate school, working on many aspects of puma genetics (population genetics, landscape genetics, phylogeography, taxonomy, paternity, and forensics), and earned a Ph.D. in Biology from the University of Maryland in 1999. Melanie spent 3 years as a Postdoctoral Research Associate at Virginia Tech where she worked on conservation genetic studies in black bears, eagles, salamanders, several fish species, and freshwater mussels. In 2002, Melanie joined the faculty at the University of Arizona as the Assistant Leader of the Arizona Cooperative Fish and Wildlife Research Unit where she works on conservation genetics and genomics with graduate students studying felids and other carnivores, other mammals, reptiles, amphibians, mollusks, and birds. She is Chair of the Genetics Graduate Interdisciplinary Program at the University of Arizona and President Elect of the Arizona Chapter of The Wildlife Society.

Abstract: Landscape features, whether natural or man-made, influence the evolution of a species, from its formation into subspecies and distinct populations to the very important connectivity among those populations. Genetic methods provide high-resolution tools to examine these patterns of subdivision and connectivity among populations within a species. Results will be presented for carnivores, rodents, and reptiles that have been studied – all at a landscape scale – with respect to population subdivision and connectivity. For black bears, microsatellite markers have given insights into the bears’ movement patterns among the habitat patches in the naturally fragmented landscape in the sky island region of Arizona and Mexico. Studies of pumas at two scales: species-wide with microsatellites and more intensively in the southwest with microsatellite and SNP markers, have given insights into what constitutes a natural and man-made barrier for a large carnivore – and what it might take to potentially disrupt natural connectivity of pumas. In Baja, California Sur, three species were examined (two rodents and one reptile) using microsatellite markers to examine the effects of habitat fragmentation due to 5-10 year old agricultural development on the landscape. Results of all three studies will be discussed as well as the advantages of different genetic marker types.

10:10-10:30-BREAK
10:30—Unmanned Aerial Vehicles (UAVs) for Rangeland and Watershed Science Applications

Albert Rango, USDA/ARS Jornada Experimental Range, and Director, USDA Southwest Regional Hub for Risk Adaptation and Mitigation to Climate Change

Al Rango is a research hydrologist at the USDA-ARS-Jornada Experimental Range in Las Cruces. He directs the Unmanned Aerial Vehicle research program that has operated in New Mexico, Idaho, Arizona, and Alaska. He was also recently selected as the Director of the USDA Southwest Climate Hub that covers New Mexico, Arizona, Utah, Nevada, California, and Hawaii.

Abstract: The Jornada Experimental Range has been using two small Bat 3 Unmanned Aerial Vehicles (UAVs) since 2006 and has more recently added a larger Bat 4 in order to carry a larger sensor payload. The original intent of the Jornada UAV program was to develop techniques for assisting operational land management agencies in their surveys of rangeland conditions, especially rangeland health. The spatial resolution of UAV images obtained with consumer grade digital cameras was approximately 6 cm (flying at 215 m altitude) which was found to be excellent for determining gaps between vegetation, size of vegetation patches, eroded areas, vegetation cover, and bare soil extent. When applying to FAA for approval to fly in the National Airspace System (NAS), it is required that a Certificate of Authorization (COA) be submitted for approval. To date, we have acquired COAs over parts of Idaho, Colorado, and Arizona and have flown in southern New Mexico under the New Mexico State University Flight Test Center COA. Flying in various states and two airspace systems has resulted in the acquisition of over 90,000 UAV images. Because there is uncertainty in what the final FAA regulations used to integrate UAVs into the NAS will be, we need to be creative in adapting to the interim regulations and to the final regulations when they are in place.

10:50—Use of Acoustic Telemetry to Track Fish Movements in a Desert Stream: A Case Study

John Caldwell, Native Fish Biologist, New Mexico Department of Game and Fish.

John Caldwell is a Fish Biologist in the NMDGF Native Fish Program. He is most interested in conservation of native fish along with the waters and landscapes in which they reside. Besides New Mexico he has been involved with conservation of trout and salmon in Northern California and darters while obtaining a Master’s degree in Arkansas.

Abstract: Information about fish movement is often needed when developing conservation actions. Two New Mexico endangered sucker species were tracked in a desert stream to determine the extent of seasonal movements and to locate restrictions to movement. The study reach consisted of large pools connected by small channels and contained two low-water road crossings that were suspected of acting as partial fish barriers. Acoustic telemetry was used to track fish because of the ability to have multiple remote receiver stations and because high water conductivity likely precluded radio telemetry. The small transmitter size allowed for implantation in a wide range of age classes with a reduced chance for tagging mortality. Transmitter programming permitted a lifespan of seven months. During 2012 transmitters were implanted in 22 fish; during 2013 transmitters were implanted in 14 fish. Fourteen of 22 (2012) and eleven of 14 (2013) fish were relocated successfully with stationary receivers and/or an active tracking receiver. Large scale movements (pool to pool) were generally captured by stationary receivers, whereas small scale movements (within pool) were captured with the active tracking unit. Tag size and life span combined with the option to track remotely or actively make this technology valuable to researchers interested in fish movement.

11:10-11:30—Panel Discussion with Plenary Speakers- Jonathan J. Derbridge-Moderator
Friday February 6, 2015
Wildlife Student Presentation Competition

Guadalupe Room 1:00-3:00 PM – Moderator: Jay V. Gedir

1:00-Evaluation of habitat suitability for dam-building beaver in northern New Mexico
*Brian A. Small (New Mexico State University)

1:20-Landscape of anthropogenic traffic noise influences occupancy and space use
*Hsiang Ling Chen (University of Arizona)

1:40-Bat assemblage and selection of maternity roosts in a post-wildfire landscape
*Erin Saunders (Northern Arizona University)

2:00-Identifying ranching leaders’ opinions of jaguar conservation and concerns with endangered species management through focused interviews
*Colleen Svancara (University of Arizona)

2:20-Estimating abundance and density of American black bears (*Ursus americanus*) in New Mexico using noninvasive genetic sampling-based capture-recapture methods
*Matthew J. Gould (New Mexico State University)

2:40-Genetic structure and hybridization of the northern leopard frog (*Lithobates pipiens*) along the Mora watershed in northern New Mexico
*Jose Griego (New Mexico Highlands University)

Wildlife Presentations

Guadalupe Room 3:20-5:20 PM – Moderator: Gary W. Roemer

3:20-Parturient desert bighorn sheep survival strategies: environmental characteristics at female parturition sites and lamb nursery and predation sites
*Rebekah C. Karsch¹, James W. Cain III², Elise J. Goldstein¹, Eric M. Rominger³ (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit, 3-New Mexico Department of Game and Fish)

3:40-Effects of non-motorized human recreation on habitat use of medium and large-sized mammals in the San Francisco Bay ecoregion
*Michelle L. Reilly, Paul Beier, Derek Sonderegger (Northern Arizona University)

4:00-Survival and cause-specific mortality of translocated mule deer in southern New Mexico
*Jana B. Ashling¹, James W. Cain III², Stewart G. Liley³ (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit, 3-New Mexico Department of Game and Fish)

4:20-Modeling black bear predation and scavenging using GPS cluster analysis
*Sarah R. Kindschuh¹, James W. Cain², (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit)

4:40-Does a bear live in the woods? An analysis of urban black bear populations in northern New Mexico
*Casey Taylor, Sarah Corey-Rivas, Jesus Rivas (New Mexico Highlands University)

5:00-Assessing pronghorn fawn survival and cause-specific mortality using vaginal implant transmitters
*Emily R. Conant¹, Mark C. Wallace¹, Warren C. Conway¹, Stewart G. Liley², Ryan L. Darr² (1-Texas Tech University, 2-New Mexico Department of Game and Fish)
Friday February 6, 2015
Fisheries Student Presentations

Tularosa Room 1:00-4:00 PM – Moderator: Amberle Jones

1:00-Differences in the resiliency of a montane grassland stream to a prescribed burn and a severe wildfire
*Domingue Lujan¹, Colleen A. Caldwell², Matthew P. Zeigler¹, Robert Parmenter³ (1-New Mexico State University, 2-USGS, New Mexico Cooperative Fish and Wildlife Research Unit, 3-Valles Caldera National Preserve)

1:20-Correlation of eDNA (Environmental DNA) surveys with traditional fish sampling surveys in standing waters
*Christina R. Perez¹, Scott A. Bonar², Jon J. Amberg³, Chris Rees³, William T. Stewart⁴, Curtis Gill⁴, Chris Cantrell⁴ (1-University of Arizona, 2-USGS, Arizona Cooperative Fish and Wildlife Research Unit, 3-USGS, Upper Midwest Environmental Sciences Center, 4-Arizona Game and Fish Department)

1:40-Algae as bioindicators of stream function in acid mine drainage systems: qualitative analyses of algal communities in Santa Cruz Watershed
*Hannah M. Moore¹, Jessica E. Gwinn¹, Floyd Gray², Peter N. Reinthal³ (1-University of Arizona, 2- USGS)

2:00-Assessing habitat-use patterns and survey methodologies of the endangered snail, *Pecos Assiminea*, at Bitter Lake National Wildlife Refuge
*Elizabeth L. Roessler¹, Timothy B. Grabowski², David Rogowski¹,³ (1-Texas Tech University, 2- USGS, Texas Cooperative Fish and Wildlife Research Unit, 3-USGS, Upper Midwest Environmental Sciences Center)

2:20-Habitat suitability criteria for Navajo Nation subunit bluehead sucker (*Catostomus discobolus*) and Zuni bluehead sucker (*Catostomus discobolus yarrowi*)
*Roy Ulibarri¹, Scott Bonar², Melissa Mata³, Glenn Selby⁴, Chris Kitcheyan¹ (1-University of Arizona, 2- USGS, Arizona Cooperative Fish and Wildlife Research Unit, 3- USFWS, 4-Navajo Nation Department of Fish and Wildlife)

2:40-Use of ultrasonic imaging to evaluate egg maturation of humpback chub (*Gila cyphæ*) in the Grand Canyon
*Morgan E. Brizendine¹, David L. Ward², Scott A. Bonar³, William J. Matter¹ (1-University of Arizona, 2-USGS, Grand Canyon Monitoring and Research Center, 3 USGS, Arizona Cooperative Fish and Wildlife Research Unit)

3:00-3:20-BREAK

Moderator: Mike Ruhl

3:20-Acute and sublethal toxicity effects of piscicide CFT Legumine™ (5% Rotenone) on tadpoles of the Chiricahua leopard frog (*Lithobates chiricahuensis*)
*Guillermo Alvarez¹, Colleen A. Caldwell² (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit)

3:40-Nitrogen media affects the productivity of *Nannochloropsis salina* cultures algal biovolume, lipid signatures, and densities of invasive organisms
*Herman Campos*, Wiebke Boeing, Barry Dungan, Tanner Schaub (New Mexico State University)
Friday February 6, 2015
Fisheries Presentations

Tularosa Room 4:00-5:20 PM – Moderator: Mike Ruhl

4:00-A landscape approach for fisheries data compilation and predictive modeling
Nicole L. Eiden, Bill Stewart (Arizona Game and Fish Department)

4:20-Conservation and Mitigation Program: an overview and progress update of
Arizona’s newest conservation program
Sharon Lashway (Arizona Game and Fish Department)

4:40-Assessment of long-term monitoring of White Sands pupfish
John S. Pittenger1, John Caldwell2, Patrick C. Morrow3 (1-Blue Earth Ecological Consultants, Inc, 2-New Mexico Department of Game and Fish, 3- White Sands Missile Range)

5:00-Spawning ecology and captive husbandry of endangered Moapa dace
*Jack E. Ruggirello1, Scott A. Bonar2, Olin G. Feuerbacher3, Chelsea Powers1 (1-University of Arizona, 2-USGS, Arizona Cooperative Fish and Wildlife Research Unit, 3- USFWS)
Friday February 6, 2015
Wildlife Presentations
Soledad Room 1:00-5:20 PM – Moderator: Jacob Naranjo

1:00-Subterranean surveys of White Sands Missile Range, New Mexico
Jason Corbett¹, Trish Cutler² (1-Bat Conservation International, 2-White Sands Missile Range)

1:20-New materials for a time-tested design for wildlife water developments in Arizona
Ed Jahrke, Joe Currie (Arizona Game and Fish Department)

1:40-Developing natural resource career pathways through citizen science
Rowan Converse, Daniel Shaw (Bosque School)

2:00-Wildlife collision mobile device data collection application
Scott Sprague, Ryan Nosek, Ray Schweinsburg (Arizona Game and Fish Department)

2:20-Using literature review and State and Transition Models for the development of wildlife interpretations for Ecological Sites on the Colorado Plateau of Arizona and Utah, USA
Marcus Miller, Casey Burns, Shane Green, Jamin Johanson, Byron Lambeth, Stu Tuttle (Natural Resources Conservation Service)

2:40-Field trials of an oral sylvatic plague vaccine in Gunnison’s prairie dog colonies
Holly E. Hicks, Jennifer Cordova (Arizona Game and Fish Department)

3:00-3:20-Break
Moderator: Tanya Roerick

3:20-Effects of habitat restoration and climate change on scaled quail in south central New Mexico
*Krysten M. Zummo¹, Scott Carleton² (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit)

3:40-Impacts of solar energy development on breeding birds of the Nutt Grasslands, NM
*DeeAnne Meliopoulos, Martha Desmond (New Mexico State University)

4:00-Potential correlation of invasive species ecological shifts and nesting success of southern willow flycatchers
*Stephanie M. Muise, Katie Stumpf (Northland College)

4:20-Investigating lesser prairie-chicken (*Tympanuchus pallidicinctus*) seasonal habitat use, reproduction, and survival to understand patterns of declining lek attendance
*Cody R. Strong¹, Scott A. Carleton², William Gould¹, Clay Nicols³, Randy Howard⁴, Grant Beauprez⁵ (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit, 3-USFWS, 4-BLM, 5-New Mexico Department of Game and Fish)

4:40- Use of Conservation Reserve Program (CRP) habitat by lesser prairie-chickens in eastern New Mexico
*Andrew R. Meyers¹, Scott A. Carlton² (1-New Mexico State University, 2-USGS New Mexico Cooperative Fish and Wildlife Research Unit)

5:00-Texas Chapter of The Wildlife Society’s Wildlife Conservation Camp
*Cody J. Bergman* (Barry Goldwater High School)
Friday February 6, 2015
Wildlife Presentations
San Agustin Room 1:00-5:20 PM – Moderator: Craig Reddell

1:00-White Sands Missile Range – Avian Protection Plan: power line bird protection in support of the military mission
Richard E. Harness¹, Trish Cutler², Lori A. Nielsen¹ (1-EDM International, Inc., 2-White Sands Missile Range)

1:20-Effects of wildfire on avian communities in the Arizona Sky Islands
Jamie S. Sanderlin, William M. Block, Joseph L. Ganey, Jose M. Iniguez, Samuel Cushman (Rocky Mountain Research Station, U.S. Forest Service)

1:40-Recovery for an ecosystem or a single species? An NRCS case study using the southwestern willow flycatcher
Stu Tuttle¹, Richard Gooch², Marcus Miller¹ (1-Natural Resources Conservation Service, 2-USFWS)

2:00-Golden eagle studies on White Sands Missile Range, New Mexico
Paul W. Juergens¹, Trish Cutler², Grainger Hunt¹ (1-Peregrine Fund, 2-White Sands Missile Range)

2:20-Effects of urbanization on birds – less water and more development leads to simplified communities
Mélanie J. Banville¹, Heather L. Bateman¹, Stevan R. Earl¹, Paige S. Warren³ (1-Arizona State University, 2-University of Massachusetts-Amherst)

2:40- Arizona Antelope Foundation Southeastern Arizona Grasslands Pronghorn Initiative
Glen Dickens, John Millican, Caroline Patrick, Shane Stewart, Tice Supplee (Arizona Antelope Foundation)

3:00-3:20-Break

3:20-Small mammal communities response to environment via barn owl (Tyto alba) pellets in Namibia
*Jennifer Merems, Aletris Neils (University of Arizona)

3:40-Impacts of natural and anthropogenic influences on jackrabbit populations in desert grasslands of southern Arizona
*Jason M. Myrand¹, *Lisa D. Lang¹, *Brian T. Cooke¹, David E. Brown², Randall D. Babb³, Aletris Neils¹ (1-University of Arizona, 2-Arizona State University, 3-Arizona Game and Fish Department)

4:00-Short-term effects of wildfire on bat activity
*Nicholas Goforth, Tigga Kingston, Robin M. Verble-Pearson (Texas Tech University)

4:20-Supplemental water methodology for reintroduced black-tailed prairie dog (Cynomys ludovicianus) colony in Arizona
*Riley Bogart¹, *Melissa Stevenson¹, Robert Fink², Aletris Neils¹ (1-University of Arizona, 2-Arizona Game and Fish Department)

4:40-Can the reestablishment of a keystone species manage woody encroachment across its former range?
*Sarah L. Hale, John L. Koprowski (University of Arizona)

5:00-Identifying structural thresholds and landscape resistance for natal dispersal movements in an endangered forest obligate
*Melissa J. Merrick, John L. Koprowski (University of Arizona)
**Friday February 6, 2015 Poster Session San Rafael**

### Wildlife Posters

<table>
<thead>
<tr>
<th>Poster</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The effects of urbanization on state change mediated by predator-prey interactions</td>
<td>Kristen A. DaVanon*, Lindsey Howard, Brandon T. Bestelmeyer, Karen E. Mabry, Robert L. Schooley</td>
</tr>
<tr>
<td>2</td>
<td>Elk population dynamics at Bosque Del Apache National Wildlife Refuge, New Mexico, USA</td>
<td>Ryan M. DeVore*, Mark C. Wallace, Matthew J. Butler, Stewart L. Liley, Ashley A. Inslee, Philip S. Gipson</td>
</tr>
<tr>
<td>3</td>
<td>Population dynamics of a recently reestablished keystone species: the black-tailed prairie dog</td>
<td>Sarah L. Hale*, John L. Koprowski</td>
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<td>Lindsey K. Howard*, Karen E. Mabry</td>
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<td>Analysis of Necrophagous beetles of eastern New Mexico</td>
<td>Cheyenne N. Lattin*</td>
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<td>Abundance and land cover associations of migrant and wintering birds of prey in the southern Great Plains</td>
<td>Natasia Mitchell*, Benjamin Skipper, Clint Boal</td>
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<td>Wildlife strikes at airports: What are the contributing factors?</td>
<td>Brett J. Montgomery*, Logan L. Salaki, Heather L. Bateman</td>
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<td>Pairing mitigation and education: how a wildlife inventory of Rancho Del Cielo in Vail, Arizona provided undergraduate field-experience</td>
<td>Linda S. Ramirez*, Heather L. Bateman</td>
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<td>Herpetofauna abundance and species richness in predicted linkage areas</td>
<td>Tiffany A. Sprague*</td>
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<td>Isidro Barela*, Jennifer K. Frey</td>
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<td>Mammals of the Greater Gila Ecosystem</td>
<td>Amanda Jones*</td>
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### Fisheries Posters

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<td>Roy M. Ulibarri*, Scott Bonar, Chris Rees, Jon Amberg</td>
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*Presenter, Student Posters in Bold*
Saturday February 7, 2015

Wildlife Presentations

Guadalupe Room 8:00-11:20 AM – Moderator: Sarah Kindschuh

8:00-Elk habitat use patterns in an arid riparian corridor managed for migratory water birds
*Ryan M. DeVore1, Mark C. Wallace1, Matthew J. Butler2, Stewart G. Liley3, Ashley A. Inslee2, Philip S. Gipson1 (1-Texas Tech University, 2-USFWS, 3-New Mexico Department of Game and Fish)

8:20-Spatially explicit population structure analyses reveal barriers to gene flow among mountain lions in southwestern United States and northwestern Mexico
*Ashwin Naidu1, Robert R. Fitak2, John Clemons3, Sophia S. Amirsultan1, Ron W. Thompson4, Alexander Ochoa1, Melanie Culver5 (1-University of Arizona, 2-University of Veterinary Medicine-Vienna, 3-Arizona Desert Bighorn Sheep Society, 4-Primero Conservation, 5-USGS, Arizona Cooperative Fish and Wildlife Research Unit)

8:40-Assessing site and climatic factors that influence large mammal water site use with camera-traps
*Jordan M. Calvert1, Aaron Alvidrez2, Kerry L. Griffis-Kyle1 (1-Texas Tech University, 2-Luke Air Force Base)

9:00-Mule deer diet analyses: comparing past with present techniques
*Chase Voirin1, Melanie Culver2 (1-University of Arizona, 2-USGS, Arizona Cooperative Fish and Wildlife Research Unit)

9:20-Genetic diversity and structure of jaguars (Panthera onca) from Arizona, US, and Sonora, Mexico
*Alexander Ochoa1, Eduardo Eizirik2, David E. Brown3, Carlos A. López-González4, Ivonne Cassaigne5, Rodrigo Medellín5, Ron W. Thompson6, Melanie Culver7 (1-University of Arizona, 2-Pontificia Universidade Católica do Rio Grande do Sul, 3- Arizona State University, 4- Universidad Autónoma de Querétaro, 5- Universidad Nacional Autónoma de México, 6-Primero Conservation, 7-USGS, Arizona Cooperative Fish and Wildlife Research Unit)

9:40-Ecology of adult female Rocky Mountain mule deer following habitat enhancements in north-central New Mexico
*Grant E. Sorensen1, Mark C. Wallace1, Philip S. Gipson1, Robert D. Cox1, James W. Cain II2 (1-Texas Tech University, 2-USGS, New Mexico Cooperative Fish and Wildlife Research Unit)

10:00-10:20-BREAK
Moderator: Matthew J. Gould

10:20-Do least-cost models predict animal movement?
*Annika T.H. Keeley1, Paul Beier1, Jeff Gagnon2 (1-Northern Arizona University, 2-Arizona Game and Fish Department)

10:40-Pronghorn activity and behavior associated with anthropogenic water source developments in New Mexico
*Dakota P. Neel1, Warren C. Conway1, Mark C. Wallace1, Stewart G. Liley2 (1-Texas Tech University, 2-New Mexico Department of Game and Fish)

11:00-Response of spotted salamander larvae to salinity and temperature
*Jasper Brusuelas, Nicole Harings, Wiebke Boeimg (New Mexico State University)
Wildlife Presentations
Soledad Room 8:00-11:20 AM  – Moderator: Jana Ashling

8:00-Identification of migratory paths and new breeding grounds of greater sandhill cranes in the Lower Colorado River Valley
*Courtenay M. Conring¹, Blake A. Grisham¹, Daniel P. Collins² (1- Texas Tech University, USFWS)

8:20-Does weather influence lesser prairie-chicken demographic parameters disproportionately in the sand shinnery oak prairie compared to the sand sagebrush prairie?
*Cody P. Griffin¹, Alixandra J. Godar¹, Blake A. Grisham¹, Clint W. Boal², David A. Haukos³, Jim C. Pitman⁴, Christian A. Hagen⁵ (1-Texas Tech University, 2-USGS, Texas Cooperative Fish and Wildlife Research Unit, 3-USGS, Kansas Cooperative Fish and Wildlife Research Unit, 4-Kansas Department of Wildlife, Parks, and Tourism, 5-Oregon State University)

8:40-Male brood provisioning rates provide evidence for inter-age competition for mates in female Cooper’s hawks (*Accipiter cooperii*)
*Lauren A. Lien¹, Brian A. Millsap³, Kristin Madden³, Gary W. Roemer¹ (1-New Mexico State University, 2-USFWS, 3-New Mexico Department of Game and Fish)

9:00-Modeling the demographics and movements of band-tailed pigeons in New Mexico
*Christopher L Coxen¹, Scott A. Carleton², Daniel P Collins³ (1-New Mexico State University, 2-USGS, New Mexico Cooperative Fish and Wildlife Research Unit, 3-USFWS)

9:20-Reverse sexual dimorphism, behavioral phenotypes, and female reproductive success: what can we learn from a fossorial, forest obligate in a fragmented landscape?
*Allyssa L. Kilanowski, John L. Koprowski (University of Arizona)

9:40-Assessment of biodiversity in the Northern Jaguar Reserve in Sonora, Mexico and its influence on the jaguar (*Panthera onca*)

10:00-10:20-BREAK

10:20-Assessing the effects of climate change on the distribution of suitable environmental conditions for key species in the south central United States
Virginia Seamster¹, Ken Boykin¹, Esteban Muldavin², Rayo McCollough², Keith Dixon³ (1-New Mexico State University, 2-University of New Mexico, 3-NOAA/GFDL)

10:40-Future landscape suitability and actionable management for several species of reptiles in Arizona and New Mexico
J. Tomasz Giemakowski¹, Erika M. Nowak² Matthew J. Johnson², Jennifer A. Holmes², James R. Hatten¹ (1-University of New Mexico, 2-Northern Arizona University, 3- USGS, Western Fisheries Research Center)

11:00- Update on the Mexican Wolf Recovery Program
Sheryl Barrett, Margaret Dwire, Tracy Melbihess, John K. Oakleaf (USFWS)
Saturday February 7, 2015

Wildlife Presentations

San Rafael Room 8:00-11:20 AM – Moderator: Virginia Seamster

8:00-Tails with a dark side: whitetail and mule deer hybridization in North America
James R. Heffelfinger (Arizona Game and Fish Department)

8:20-Predicting long-term pronghorn population dynamics in the southwest U.S.A. in response to climate change
Jay V. Gedir1, James W. Cain III2, Grant Harris3, Trey T. Turnbull1 (1-New Mexico State University, 2-USGS, New Mexico Cooperative Fish and Wildlife Research Unit, 3-USFWS)

8:40-The application of occupancy modeling to evaluate intraguild predation in a model carnivore system
*Quinn H. Robinson1, David Bustos2, Gary W. Roemer1 (1- New Mexico State University, 2-White Sands National Monument)

9:00-Can a sylvatic plague vaccine for prairie dogs assist the black-footed ferret recovery program?
David L. Bergman1, Terry B. Johnson2, Tonie E. Rocke1, Pete Gober1, William E. Van Pelt1, Michael W. Miller4, Daniel W. Tripp6, Rachel C. Abbott3 (1-USDA-APHIS Wildlife Services, 2-Endangered Species Advisement, 3-USFWS, 4-USGS National Wildlife Health Center, 5-Arizona Game and Fish Department, 6-Colorado Parks and Wildlife)

9:20-Noninvasive survey methods for mid-sized and small carnivores in New Mexico
Robert L. Harrison (University of New Mexico)

9:40-How to prioritize sites for species representation when you have species data for 0% to 20% of the sites in your planning area
Paul Beier, Fábio Suzart de Albuquerque (Northern Arizona University)

10:00-10:20-BREAK
Moderator: Jennifer Frey

10:20-Occupancy estimation of amphibian breeding in Yellowstone and Grand Teton National Parks: on the usefulness of covariates
William R. Gould1, Andy Ray2, Debra Patla1, Blake Hossack4, Rob Daley2, Kristin Legg2 (1-New Mexico State University, 2-National Park Service, 3-Northern Rockies Conservation Cooperative, 4-USGS, Northern Rockies Mountain Science Center)

10:40-Connectivity and isolation in the management of aquatic resources in the Sonoran Desert: nested frameworks for maintaining biodiversity
*Joseph C. Drake, Nancy E. McIntyre, Kerry L. Griffis-Kyle (Texas Tech University)

10:40-The decline of another southwestern anuran species? Recent population trends of the Arizona toad in west-central New Mexico
*Mason J Ryan, *Ian M Latella, J. Tomasz Giermakowski (University of New Mexico)
Saturday February 7, 2015
Fisheries Presentations
San Agustin Room 8:00-11:20 AM – Moderator: Scott Rogers

8:00-Differences in growth rate and size variations in hand fed vs demand fed rainbow trout
  Ethan Mower (New Mexico Department of Game and Fish)

8:20-Use of cold branding in marking channel catfish
  Shawn R. Denny (New Mexico Department of Game and Fish)

8:40-Fish community’s response to change water storage levels at Elephant Butte Reservoir
  Eric M. Mammoser, Kevin T. Gardener (New Mexico Department of Game and Fish)

9:00-Predicting persistence of Rio Grande cutthroat trout populations in an uncertain future
  Matthew P. Zeigler1, Kevin B. Rogers2, James J. Roberts3, Andrew S. Todd3, Kurt D. Fausch4
  (1-New Mexico State University, 2-Colorado Parks and Wildlife, 3-USGS, 4-Colorado State University)

9:20-Rio Costilla progress, challenges, and impacts of large-scale native sport fish restoration
  Bryan D. Bakevich (New Mexico Department of Game and Fish)

9:40-The fate of stocked trout in Arizona streams
  Sally J. Petre1, Bill Stewart1, Jessica Gwinn2 (1- Arizona Game and Fish Department, 2-USFWS)

10:00 - 10:20 BREAK
  Moderator: Eric Frey

10:20-Little fish big river- dam operations and fish life history
  David L. Rogowski, Bill Stewart (Arizona Game and Fish Department)

10:40-Use of portable passive integrated transponder (PIT) antennas to supplement hoop and trammel net surveys in Grand Canyon
  Kirk Young, Mike J. Pillow (USFWS)

11:00-Factors affecting hoop net CPUE in Little Colorado River, AZ
  Lisa K. Winters, David Rogowski (Arizona Game and Fish Department)
Saturday February 7, 2015
Fisheries Presentations

Tularosa Room 8:00-9:40 AM – Moderator: Nicole Eiden

8:00-Eradication of invasive aquatic species using carbon dioxide and liquid ammonia
    David Ward¹, Rylan Morton-Starner¹, Ben Vaage¹, Shaula Hedwall² (1-USGS, Grand Canyon Monitoring and Research Center, 2-USFWS)

8:20-Evaluation of long-term mechanical removal of brown trout from Apache trout recovery streams
    Jennifer L. Johnson, Jeremy B. Voeltz (USFWS, Arizona Fish and Wildlife Conservation Office)

8:40-Turkeys, snails and crayfish... oh my! Three fork spring snail habitat improvement 2014
    Jeff A. Sorensen¹, Scott P. Lerich² (1-Arizona Game and Fish Department, 2-National Wild Turkey Federation)

9:00-Habitat diversity, water quality, and biotic factors drive benthic macroinvertebrate communities in desert sinkholes
    Wiebke J. Boeing, Neeshia Macanowicz (New Mexico State University)

Saturday February 7, 2015
Wildlife Presentations

Tularosa Room 10:20-11:20 AM – Moderator: Susan Bard

10:20-Species from feces: a tool for genetically identifying bats
    Faith M. Walker, Charles H.D. Williamson, Dan E. Sanchez, Colin J. Sobek, Carol L. Chambers (Northern Arizona University)

10:40-A DNA sequencing approach for characterizing microbial and bat species composition in mines from guano

11:00-New paradigms in wildlife data collection
    Michael W. Shafer, Carol L. Chambers (Northern Arizona University)
Organizations and Individuals Donating Raffle Items

Wild Birds Unlimited, Albuquerque

U.S. Fish and Wildlife Service, Sevilleta National Wildlife Refuge

Mari Howe

Cindy Barrilleaux

James Cain

Kathy Granillo