

Industry Best Practices for Human-Polar Bear Conflict Reduction on Alaska's North Slope

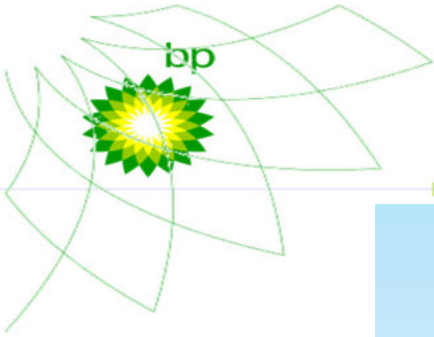
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BP Exploration (Alaska), Inc.

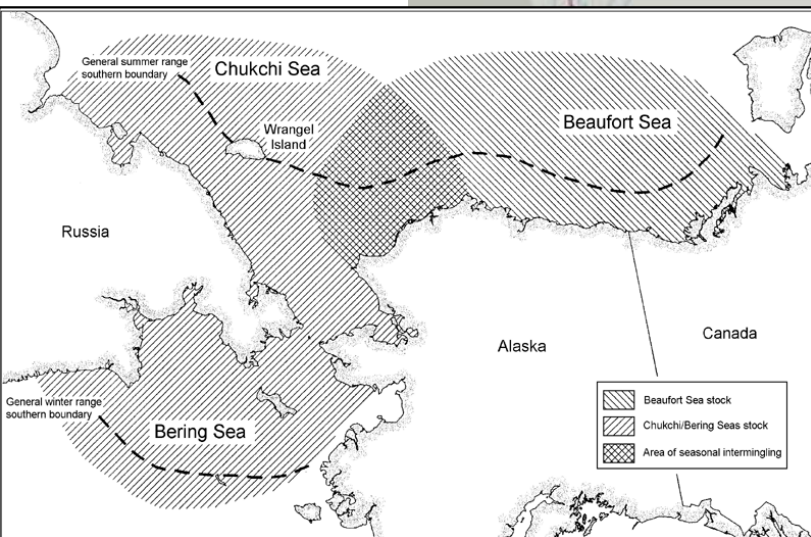
CAFF Arctic Biodiversity Congress (Rovaniemi, Finland)

October 12, 2018





Alaska's North Slope

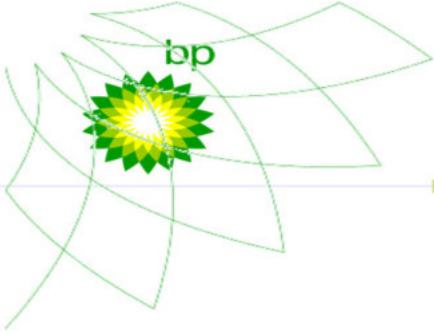


Alaska's Oilfields

- Beaufort Sea Coast
- Primarily terrestrial oilfields
- Artificial and enhanced islands in shallow and nearshore waters
- BP Alaska operates the Prudhoe Bay Oilfield

Why does an oil company care about bears?

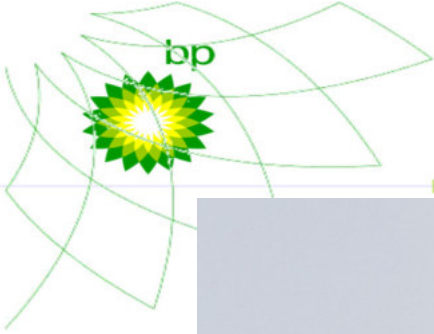
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- We have to!
 - We have a lot of them
 - Worker safety
 - Bear safety
 - Reputation – Responsible operator
 - Fun



Regulatory Framework

- Incidental Take
- Intentional (Deterrence)
- Extensive set of programmatic requirements:
 - Consultation with subsistence users
 - Detection
 - Mitigation
 - Monitoring
 - Reporting
- Authorizations require Polar Bear Interaction Plans



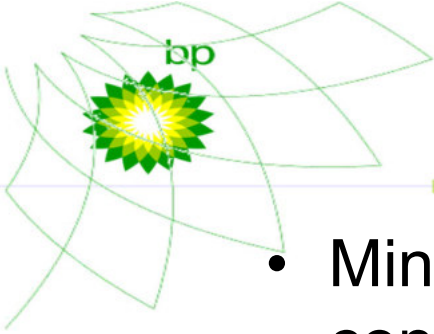


Subsistence Communities



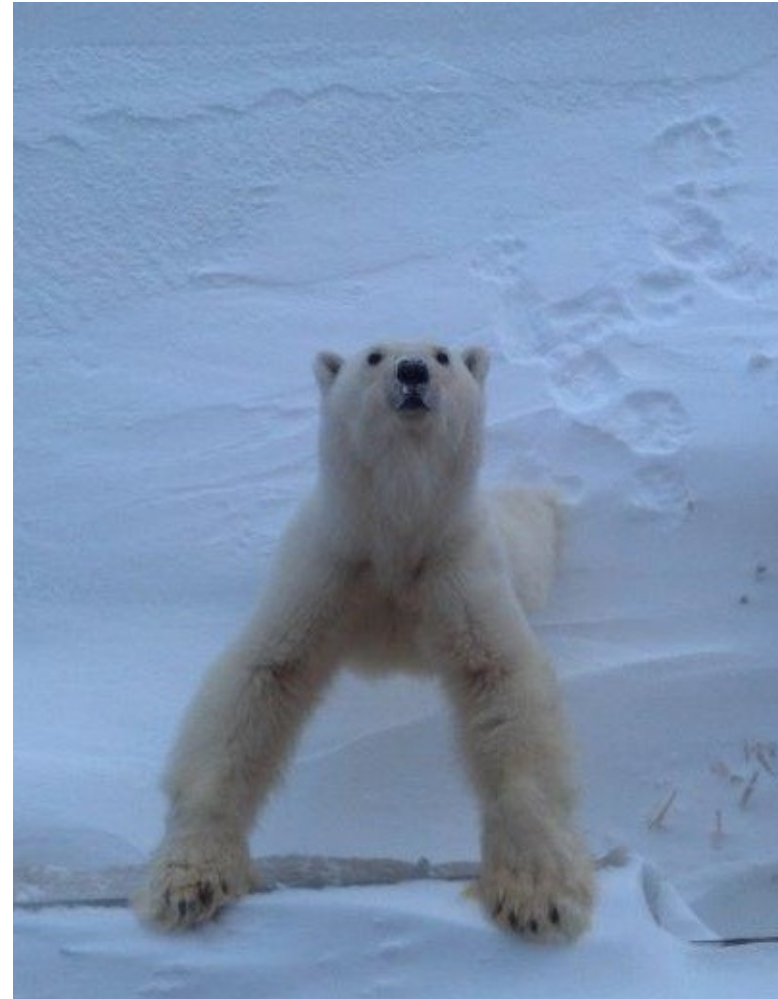
Must minimize adverse impacts on availability of polar bears for subsistence uses

- Consult with subsistence communities to identify potential conflicts
- Develop & implement a Plan of Cooperation with communities
- Benefit from local knowledge
- Guidance: NSB & FWS



Polar Bear Interaction Plans

- Minimize Human-bear conflict
- Education
- Training
- Monitoring/reporting
- Facilities management
- Human vs. bear areas
- Deterrence
- Protection of dens
- **Collaboration is Key!**
- Evolution (30 years)



Success

- Bear vs. Human Areas
- High numbers of bears
- Relatively low deterrence activity
- Co-Habitation



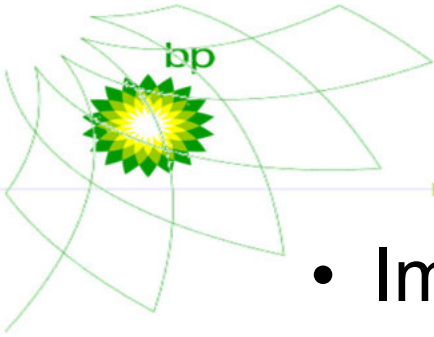


Attractant Management



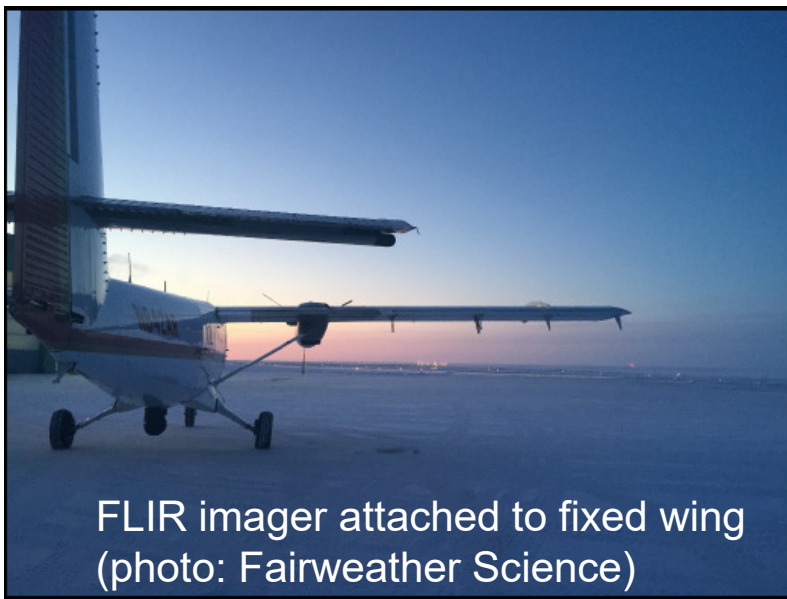
Den Detection

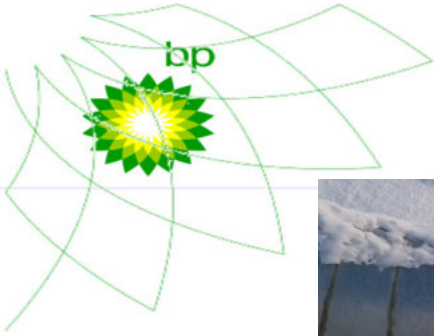
- Collared bears (need-to-know)
- Annual industry surveys for dens
- Protocols developed by USGS
- Targeted survey areas
- Thermal imaging (FLIR)



Detecting Dens

- Imagery-based applications
- Forward- Looking Infrared Imagers (FLIR)
- Industry's “go-to” mitigation method
- Detects heat signature on den surface





FLIR Advantages and Challenges

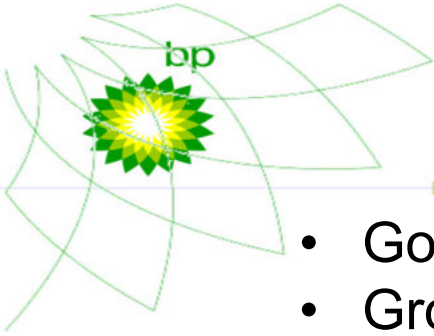


Advantages:

- Detection rates may be 90% in “optimal” conditions
- Flexible platform (airborne, handheld)

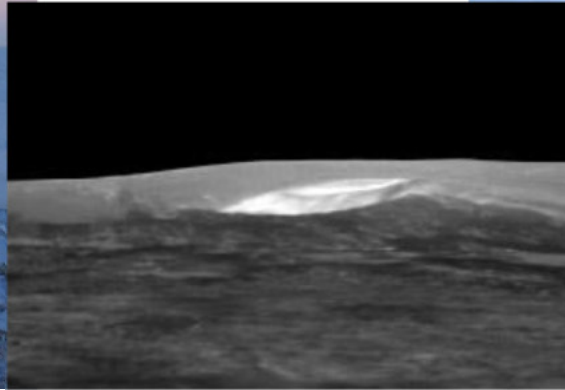
Challenges:

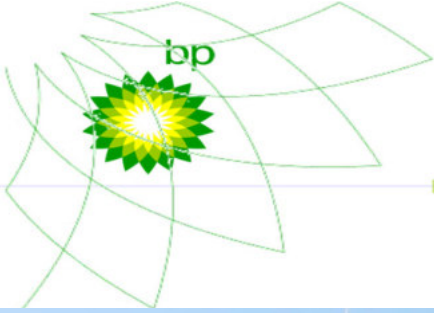
- Sensitive to environmental conditions
 - False negatives & positives
- Weather dependent
- Observer fatigue
- Method only as good as protocol
 - Route selection
 - Timing
 - # of surveys flown
- Bears are good at not being found



Verification of Dens

- Government Personnel
- Ground Truthing:
 - Visual confirmation
 - Trained Service Dogs (Karelian Bear dogs)
 - Handheld thermal detection
- Protocols to avoid disturbance





Verification of Dens – Dogs & Beyond

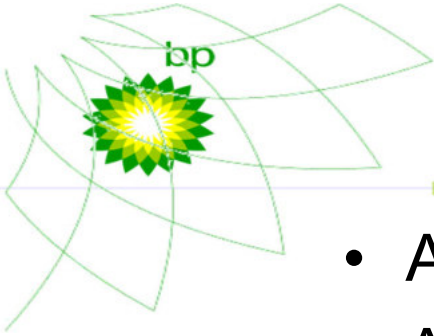
Advantages

- Information
 - FLIR effectiveness
 - Data point
- Den specific mitigation plan (or not!)
- Dogs beat technology
 - No batteries
 - Rarely “false alert”

Challenges:

- | | |
|---------------|----------------|
| – Scheduling | - Logistics |
| – Contracting | - Risk |
| – Conditions | - Availability |





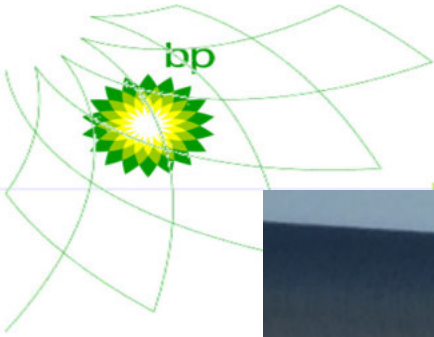
Protection of Dens

- Alter projects as needed
- Activity restrictions within 1-mile of known dens
- No disturbance

In-field dens:

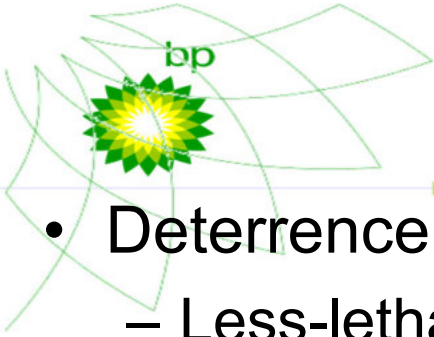
- Den specific management plan
 - Transparency
 - Collaboration
 - Innovation
 - Communication
 - Monitoring
 - Emergence protocols
- Challenges
 - Each den is different
 - Time
 - Monitoring
 - Cost
 - Technology limitations
 - Technology concerns
 - Oil field needs
 - Sharing lessons





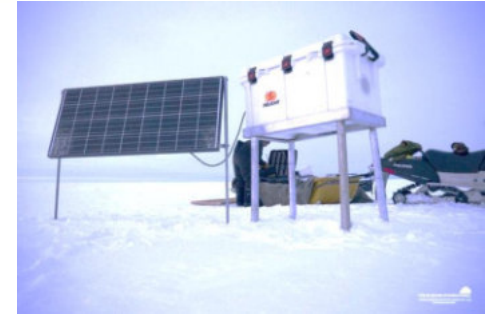
2018 Successful L5 Den Emergence





Innovation – Culture of Improvement

- Deterrence Tactics
 - Less-lethal devices
 - Sight & sound
 - Carbine Pepperball launcher
- Early Detection
 - Ground based radar
- Den Detection & Emergence
 - FLIR, SAR, UAVs
- Den Emergence
 - Research → long term monitoring
 - Direct observation to remote cameras
- PARTNERSHIPS! Govt., Academia, Non-Profits



Looking Forward

- Committed to strong and collaborative partnerships
- Continue to:
 - Be leaders and partners in successful human-bear conflict management
 - Support monitoring, mitigation and studies
 - Share best practices
- Transparency & cooperation with partners in government





Questions?

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Slideshow Photos courtesy of: BP Exploration (Alaska), Inc; Drew Hamilton Photography;
Polar Bears International/Brigham Young University (BP Sponsored Maternal Den Emergence Study)