**Battelle ARO Project Risk Assessment / Field Risk Resource Links**

*Critical Environmental Health, Safety and Environment Topics*

Hazardous Materials:

[Hazardous Waste Operations and Emergency Response (HAZWOPER) - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/emergency-preparedness/hazardous-waste-operations)

[What is Hazardous Material? | NFPA](https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/NFPA-Today/Blog-Posts/2022/04/15/What-is-Hazardous-Material)

[Hazard Communication - Guidance Documents | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/hazcom/guidance#:~:text=Hazard%20Communication%3A%20Hazard%20Classification%20Guidance%20for%20Manufacturers%2C%20Importers%2C,3695%20%2803%2F2014%29.%20Hazard%20Communication%20Standard%3A%20Safety%20Data%20Sheets.)

Explosives and Blasting:

[OSMRE Blaster Certification | Office of Surface Mining Reclamation and Enforcement](https://www.osmre.gov/programs/regulating-active-coal-mines/blaster-certification#:~:text=Therefore%2C%20the%20Federal%20certificate%20is%20a%20good%20surface,the%20right%20mix%20of%20experience%2C%20training%20and%20testing.)

[Microsoft Word - Section 24 Blasting Operations.doc (usbr.gov)](https://www.usbr.gov/safety/rshs/documents/sec24.pdf)

[30 U.S. Code § 873 - Blasting and explosives | U.S. Code | US Law | LII / Legal Information Institute (cornell.edu)](https://www.law.cornell.edu/uscode/text/30/873)

Science Equipment and Instruments:

[Laboratory Equipment Hazards OSHAcademy Free Online Training (oshatrain.org)](https://www.oshatrain.org/courses/mods/757m9.html)

[Laboratories - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/laboratories)

Firearms Safety:

[Learn About Firearms Safety and Security | Bureau of Alcohol, Tobacco, Firearms and Explosives (atf.gov)](https://www.atf.gov/firearms/learn-about-firearms-safety-and-security)

[Student Courses | Firearm Training (nra.org)](https://firearmtraining.nra.org/student-courses/)

Large and Dangerous Wildlife:

[Alaska's Species Information, Alaska Department of Fish and Game](https://www.adfg.alaska.gov/index.cfm?adfg=species.main)

[Living With Wildlife, Alaska Department of Fish and Game](https://www.adfg.alaska.gov/index.cfm?adfg=livewith.main)

[Wildlife - Health & Safety (U.S. National Park Service) (nps.gov)](https://www.nps.gov/subjects/healthandsafety/wildlife.htm)

[Staying Safe Around Bears - Bears (U.S. National Park Service) (nps.gov)](https://www.nps.gov/subjects/bears/safety.htm)

[Be BearWise with these bear safety tips - at home and when outdoors](https://bearwise.org/bear-safety-tips/)

https://polarbearagreement.org/about-us/1973-agreement

Glacier Travel:

[Mountaineering: The Freedom of the Hills - Wikipedia](https://en.wikipedia.org/wiki/Mountaineering:_The_Freedom_of_the_Hills)

Trench and Pit Work:

[Trenching and Excavation - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/trenching-excavation)

[Trenching and Excavation | NIOSH | CDC](https://www.cdc.gov/niosh/topics/trenching/default.html)

Heavy Assembly / Rigging:

[1926.753 - Hoisting and rigging. | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.753)

[Hoisting & Rigging | Office of Environmental Health and Safety (princeton.edu)](https://ehs.princeton.edu/workplace-construction/construction-safety/hoisting-rigging)

Tower Climbing / Work at Height:

[Fall Protection - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/fall-protection)

[NATE: The Communications Infrastructure Contractors Association | Safety Resources (natehome.com)](https://natehome.com/safety-education/safety-resources/#:~:text=Safety%20Resources%20NATE%20has%20developed%20numerous%20resources%20for,while%20others%20are%20reserved%20for%20NATE%20Members%20only.)

Small Boat Travel:

[Watercraft Safety Training Program | U.S. Fish & Wildlife Service (fws.gov)](https://fws.gov/training/national-training-programs/watercraft-safety)

[United States Coast Guard | Boating Safety (uscgboating.org)](https://www.uscgboating.org/)

[AMSEA Knowledge Base](https://www.amsea.org/knowledge-base)

Cold Water Immersion:

[Why It's Dangerous | cold water safety](https://www.coldwatersafety.org/the-danger#:~:text=Because%20skin%20blood%20vessels%20constrict%20in%20response%20to,things%20happen%20long%20before%20hypothermia%20becomes%20an%20issue.)

[Cold Water Hazards and Safety (weather.gov)](https://www.weather.gov/safety/coldwater)

Travel on Lake and River Ice:

[Safety on Ice | FHWA (dot.gov)](https://highways.dot.gov/public-roads/autumn-2021/04)

[Learn How to Stay Safe on the Ice in the Winter (adirondack.net)](https://www.adirondack.net/winter/hiking/ice-safety-tips/#:~:text=As%20such%2C%20if%20you%20plan%20on%20traveling%20over,about%2015%25%20weaker%20than%20ice%20over%20non-running%20waters.)

[General ice thickness guidelines | Minnesota DNR (state.mn.us)](https://www.dnr.state.mn.us/safety/ice/thickness.html)

Health

Carbon Monoxide Poisoning:

[Carbon monoxide poisoning - Symptoms and causes - Mayo Clinic](https://www.mayoclinic.org/diseases-conditions/carbon-monoxide/symptoms-causes/syc-20370642)

[Carbon Monoxide Poisoning | CDC](https://www.cdc.gov/co/default.htm)

Waterborne Illnesses:

[Recreational Waterborne Illnesses: Recognition, Treatment, and Prevention | AAFP](https://www.aafp.org/pubs/afp/issues/2017/0501/p554.html)

[8 Prominent Types of Waterborne Diseases and How to Treat Them | AOS (aosts.com)](https://aosts.com/8-prominent-waterborne-diseases-treat/)

Asbestos Containing Materials (ACM’s):

[Asbestos - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/asbestos#:~:text=Asbestos%20includes%20the%20mineral%20fibers%20chrysotile%2C%20amosite%2C%20crocidolite%2C,materials%20that%20have%20been%20chemically%20treated%20or%20altered.)

[Asbestos-Containing Materials (ACM) and Demolition | US EPA](https://www.epa.gov/large-scale-residential-demolition/asbestos-containing-materials-acm-and-demolition)

Environment

Alpine Terrain:

[Chapter 1: Basic knowledge for alpine climbing | LAB ROCK (ortovox.com)](https://www.ortovox.com/uk/safety-academy-lab-rock/chapter-1-alpine-climbing-basics)

[Mountaineering Grades: Decoding the Different Systems – Ascentionism](https://ascentionism.com/mountaineering-difficulty-ratings-decoding-the-systems/)

Avalanche Hazard:

[Avalanche Safety & Rescue Courses | American Alpine Institute](https://www.alpineinstitute.com/programs/courses/skiing-avalanche-training/)

[Avalanche Safety » Intro](https://avalanche.org/avalanche-tutorial/)

[Avalanche Resources | AAIC (alaskasnow.org)](https://alaskasnow.org/education/avalanche-resources/)

Extreme Cold and Storm Conditions:

[Hypothermia and Cold Weather Injuries | AAFP](https://www.aafp.org/pubs/afp/issues/2019/1201/p680.html)

[Frostbite - Symptoms and causes - Mayo Clinic](https://www.mayoclinic.org/diseases-conditions/frostbite/symptoms-causes/syc-20372656)

[Hypothermia: Signs, Symptoms, Causes, and Treatment (webmd.com)](https://www.webmd.com/a-to-z-guides/what-is-hypothermia)

[How to get dressed: Arctic Field Style by Lisa Hupp/USFWS | What's it take to be an extreme bird nerd? Well, sometimes it takes dressing up... What it's like to be inside a remote research camp in Arctic... | By U.S. Fish and Wildlife Service | Facebook](https://www.facebook.com/USFWS/videos/172415357007839/)

Earthquakes:

[Preparing for an Earthquake | Natural Disasters and Severe Weather | CDC](https://www.cdc.gov/disasters/earthquakes/prepared.html)

Wildland Fire:

[Wildfire preparedness tips (nfpa.org)](https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Wildfire-safety-tips)

[Safety During a Wildfire|Wildfires (cdc.gov)](https://www.cdc.gov/disasters/wildfires/duringfire.html)

[Alaska Wildland Fire Information Map Series (arcgis.com)](https://blm-egis.maps.arcgis.com/apps/MapSeries/index.html?appid=32ec4f34fb234ce58df6b1222a207ef1)

High Altitude:

[Severe High Altitude Sickness Symptoms & Relief | Alpine Oxygen](https://alpineoxygen.net/altitude-sickness/?msclkid=91d0cc5a938a12620fefaf8af3e24e2e&utm_source=bing&utm_medium=cpc&utm_campaign=**LP%20Search%20-%20DSA&utm_term=alpineoxygen&utm_content=All%20Pages)

[Altitude Sickness: Symptoms, Diagnosis, Treatment & Prevention (clevelandclinic.org)](https://my.clevelandclinic.org/health/diseases/15111-altitude-sickness)

[Acute Altitude Illness: Updated Prevention and Treatment Guidelines from the Wilderness Medical Society | AAFP](https://www.aafp.org/pubs/afp/issues/2020/0415/p505.html)

Insects:

[10 Types of Insect Bites and How To Treat Them (health.com)](https://www.health.com/condition/skin-conditions/insect-bites)

[Mosquito bites - Diagnosis and treatment - Mayo Clinic](https://www.mayoclinic.org/diseases-conditions/mosquito-bites/diagnosis-treatment/drc-20375314)

Sea Ice Travel:

[PowerPoint Presentation (unis.no)](https://www.unis.no/wp-content/uploads/2016/01/Movement_on_sea_ice_update_09_01_2016.pdf)

[Full article: Changes in sea ice travel conditions in Uummannaq Fjord, Greenland (1985–2019) assessed through remote sensing and transportation accessibility modeling (tandfonline.com)](https://www.tandfonline.com/doi/full/10.1080/1088937X.2021.1938271)

[Augmenting Inuit knowledge for safe sea-ice travel - The SmartICE information system | Request PDF (researchgate.net)](https://www.researchgate.net/publication/271199934_Augmenting_Inuit_knowledge_for_safe_sea-ice_travel_-_The_SmartICE_information_system#:~:text=If%20the%20recent%20trend%20of%20warmer%20Arctic%20winters,on%20past%20climatic%20conditions%20will%20become%20less%20reliable.)

Silt Flats and Quicksand:

[How To Get Out Of Quicksand - WorldAtlas](https://www.worldatlas.com/articles/how-to-get-out-of-quicksand.html)

[How To Survive Quicksand | Primal Survivor - YouTube](https://www.youtube.com/watch?v=7CIOWh1JNTs)

Tsunami:

[Tsunamis | National Oceanic and Atmospheric Administration (noaa.gov)](https://www.noaa.gov/education/resource-collections/ocean-coasts/tsunamis#:~:text=Tsunami%20safety%20A%20tsunami%20only%20becomes%20hazardous%20when,shorelines%2C%20it%20slows%20to%2020%20to%2030%20mph.)

[Tsunami Preparedness | Tsunami Safety Tips | Red Cross](https://www.redcross.org/get-help/how-to-prepare-for-emergencies/types-of-emergencies/tsunami.html)

Equipment

Multiple Fuels:

[Understanding HAZMAT Placards | ArcBest](https://arcb.com/blog/understanding-hazmat-placards)

[Hazard Communication - Overview | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/hazcom)

Unmanned Aircraft Systems/ UAVs:

[Become a Drone Pilot | Federal Aviation Administration (faa.gov)](https://www.faa.gov/uas/commercial_operators/become_a_drone_pilot)

[Drone Pilot Certification Guide 2023: Inside the FAA’s Part 107 Regulations (neit.edu)](https://www.neit.edu/blog/drone-pilot-certification)

[Course Catalog | IAT](https://www.iat.gov/training/searchcourses.asp)

[Unmanned Aircraft Systems (UAS) | Federal Aviation Administration (faa.gov)](https://www.faa.gov/uas)

Power Tools and Equipment:

[Personal Protective Equipment (PPE) Safety | SafetyCulture](https://safetyculture.com/topics/ppe-safety/)

[Hand and Power Tools - Standards | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/hand-power-tools/standards)

Vessels:

[AMSEA - Alaska Marine Safety Education Association](https://www.amsea.org/)

[UNOLS Designated Vessels | UNOLS](https://www.unols.org/ships-facilities/unols-vessels)

[Safety at Sea Courses - US Sailing](https://www.ussailing.org/education/adult/safety-at-sea-courses-2022/)

[How to Operate a USCG Dewatering Pump (amsea.org)](https://www.amsea.org/post/how-to-operate-a-uscg-dewatering-pump?postId=a66b6552-3b1b-4b63-9fc6-d3943502e4e0&utm_campaign=e83a11b0-8a36-4815-b365-5c37ca795e19&utm_source=so&utm_medium=mail&utm_content=e16df524-752d-4d47-a0d5-c4424763821c&cid=c349f974-f51c-42e8-b4ea-0df45a987f65)

Activities

Remote Vehicle Travel:

[University of Alaska](https://www.alaska.edu/risksafety/download/RemoteTravelSafetyGuide.pdf)

ATV travel:

[OHV & ATV Safety | CPSC.gov](https://www.cpsc.gov/Safety-Education/Safety-Education-Centers/ATV-Safety-Information-Center)

[ATV\_safety\_information.pdf (army.mil)](https://www.benning.army.mil/mcoe/MCoESafety/Content/PDF/ATV_safety_information.pdf)

Knife Use:

[Microsoft Word - 1435 Guide.docx (apsafetytraining.com)](https://files.apsafetytraining.com/Related-Documents/1435-E-LG.pdf)

Fixed Wing Aircraft Safety:

[Course Catalog | IAT](https://www.iat.gov/training/searchcourses.asp)

Rotorcraft Safety:

[Course Catalog | IAT](https://www.iat.gov/training/searchcourses.asp)

Safe Lifting:

[OSHA Proper Lifting Techniques: Safe Lifting Ergonomics](https://www.osha.com/blog/proper-lifting-techniques#:~:text=OSHA%20has%20no%20specific%20standard%20related%20to%20ergonomic,protect%20workers%20from%20serious%20and%20recognized%20workplace%20hazards.)

Open Ocean Travel: (see Vessels)

River Crossings:

[Safe River Crossings (U.S. National Park Service) (nps.gov)](https://www.nps.gov/articles/safe-river-crossings.htm)

[Stream crossing safety while hiking and backpacking - Pacific Crest Trail Association (pcta.org)](https://www.pcta.org/discover-the-trail/backcountry-basics/water/stream-crossing-safety/)

Snow Machine Travel:

[Snowmobiling Safety, ISMA (International Snowmobile Manufacturers Association)-Information for snowmobilers: snowmobiling trails and safety; facts and trends](https://www.snowmobile.org/snowmobiling-safety.html)

Truck Travel:

[ruralremotedriving.pdf (hpw.qld.gov.au)](https://www.hpw.qld.gov.au/__data/assets/pdf_file/0025/9736/ruralremotedriving.pdf)

[Winter Weather - Hazards/Precautions | Occupational Safety and Health Administration (osha.gov)](https://www.osha.gov/winter-weather/hazards)