Animals on the Move: Stories of migration and dispersal over land and under sea

Rates and Scales of Change-- concept sequence in storyline development

Animal	**Movement**	**How far? (km); How do we know?**	**Environmental change**	**SOS or Flat Screen**	**Dataset**	**Duration (min)**
Great White Shark	Migration, Swimming	FL to Cape Cod is about 2000 km; some 10,000 km; tagging	Seasonal	SOS	Shark Tracks	No presentation, this is just what will be playing on SOS when people enter the room
Humans	Transportation	Long distances	???	SOS	Human transportation	3
Birds	Migration, Flying	eBird dataset has species ranging from 1000 to 10000 km; observed sightings	Seasonal	SOS	Bird migration	3
Sooty Shearwater	Migration, Flying	64,000 km/y - round trip! ~1000 km/d Reference; tagging	Seasonal	SOS	Seal and Seabird	3
Winds affect the birds and butterflies mentioned earlier; concept of dispersal (distinguish from migration) (Dandelion)-Dispersal by wind				SOS	CCMP Surface Wind Vectors (NASA SVS)	3
Which organisms can respond to something like a			Transition from	SOS	Real-time Fires	3

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forest fire? (plants vs animals)			seasonal to abrupt change			
What about events without warning and that may occur less frequently?			Abrupt	SOS	Earthquakes and Volcanoes; overlay Plate Boundaries	3
Transition to habitats underwater; Volcanic eruptions at deep seafloor; then dive to where tubeworms discovered			Abrupt	SOS	Deep-Sea Vents Locations; overlay Plate Boundaries	3
Deep-sea tubeworm	Dispersal by ocean current	~100 km; modeling	Abrupt	SOS	Deep-Sea Vents: Life Without Sunlight, Galapagos Rift mov	10
concept of dispersal by water currents; Might expect dispersal in shallow ocean to be farther due to faster currents			Transition from abrupt to long-term change	SOS	Surface and 2000m currents (NASA SVS)	3
Coral reefs, sessile organisms	Transition to shallower, more familiar habitats	~10 km to ~50 km; modeling	Long-term	SOS	Reefs at Risk	3
Wrap up using an image montage that shows all of the animals that we talked about			Recap with same order: seasonal, abrupt, long-term	SOS	image montage of animals	3

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